Hospital Management Training
New ways to improve services in Indonesia
A Text Book and Guide - First Edition

Adi Utarini

Gertrud Schmidt-Ehry

Peter Hill

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UNIVERSITAS GADJAH MADA
FACULTY OF MEDICINE

FOREWORD

Since the year of 2000, GTZ has already established a close collaboration with Faculty of Medicine, Universitas Gadjah Mada in the areas of teaching and learning process, research and consultation. The Principal Advisor of GTZ at that time, Dr. Paul Rueckert, visited our university as a guest lecturer and gave lecture at the International Programme of Medical Education in the Faculty of Medicine, Universitas Gadjah Mada. When Dr. Rueckert was replaced by Dr. Gertrud Schmidt-Ehry, the existing collaboration was then enhanced not only in the area of consultation on Health Financing, but also in the field of hospital management.

In year 2004, Dr. Gertrud Schmidt-Ehry from GTZ came to Yogyakarta to visit the hospital management master program at the Public Health graduate program in our Faculty. During this visit, ideas and idealisms were expressed from both sides and this became the starting point of the Hospital Management Training (HMT) program in Nusa Tenggara Barat (NTB) province of Indonesia. Two years later (2006), training needs assessment labelled as Rapid Assessment Procedure in Hospital Management, was carried out in Nusa Tenggara Barat and Nusa Tenggara Timur provinces. Following intensive dialogues between the stakeholders involved, HMT finally embarked on January 2008 with 18 training participants were participating from three public hospitals in Lombok island, NTB province.

This course was developed jointly with the hospital management master program, building on the current courses offered. Being part of the Faculty of Medicine with rich innovation in medical education, the hospital management curriculum also reflects a dynamic and continuous process of searching innovative strategies most appropriate for the education of hospital managers. With adaptations to meet the local needs of hospitals in NTB province, HMT course renews and implements the spirit of patient safety in hospital services by putting the patient first, reinforced by better clinical performance management, creating a well-functioning hospital and building linkages between hospitals and the health care system. This is achieved through the four main learning blocks in HMT, starting from patient safety and customer-focused services, clinical management system, functional management system and strategic management and leadership.

Through partnership with GTZ, SEAMEO TROPMED, University of Mataram and particularly hospitals in NTB province, this training has given mutual benefit. For UGM, not only the current curriculum in hospital management is strengthened, but also the overall training model that includes triangulation approach, integration of quality improvement action into the training, and comprehensive training evaluation methods strengthens the efforts to contribute in improving competence of hospital managers and human resources in health in general. We realize that HMT course will not cover all the menu needed for hospital managers to improve the hospital services. We do hope, however, that the course enlights the hospital team work, motivates the team and hospital to update and apply their knowledge, and leads the way to sustain continuous quality improvement culture.

Finally, I would like to express my appreciation to NTB province and the hospitals, and to congratulate all stakeholders that have been involved in the efforts to develop human resource capacity of those engaged in managing hospitals. In this book, lessons learnt from the training process and key concepts applied in HMT are documented with the intention to further encourage other provinces as well as regions outside Indonesia to apply and adapt this training model in the pathway to improve management of hospitals for the benefit of the community at large.

Prof. Ali Ghufron Mukti, M.D., MSc, PhD

Dean,
Faculty of Medicine
Universitas Gadjah Mada

FOREWORD

The human resource is considered to be the most important resource of the health care system. The performance of the health care system is greatly influenced by the knowledge, skills and motivation of the human resource delivering the services. The quality and quantity of the health workforce determines to a great extent the success of a reformed health sector. Within the hospital setting, the same requirement exists. The quality of the services is influenced by the technical and managerial skills of the hospital team. The Hospital Management Training, developed and implemented within the context of GTZ and the Ministry of Health of Indonesia collaborative health projects, aims to improve the management skills of the hospital teams by focusing on behavioral change and internalization of the culture of quality improvement. The approach utilized in the training can be shared with other provinces within Indonesia and can be adapted to suit conditions in other countries in the region. This course is very timely to address the different challenges faced by the hospital and its staff especially in a decentralized state of health care like Indonesia.

As in any training program, continuous monitoring of the process of implementation of the training, and the utilization of the skills gained are prerequisites to its effectiveness. Furthermore, it should be underscored that the mainstreaming of the quality improvement concept is crucial in achieving a patient-oriented hospital services. SEAMEO TROMED Network's participation in the development, implementation and evaluation of this course is consistent with the mission of the Network and its mandate on the human resource development. A similar partnership was implemented in the 2 projects of GTZ in Cambodia.

Prof. Dr. Pratap Singhasivanon

Secretary General/Coordinator
Southeast Asian Ministers of Education Organization
Tropical Medicine and Public Health Network

FOREWORD

All praises to God Almighty for His permission and blessings that a book on Hospital Management Training (HMT) has been finalized. I also would like to appreciate the team who has prepared the book since November 2008. HMT planning was started with a workshop on 4 - 5 May 2007 in Jakarta, as a follow up of a Rapid Assessment Survey on Hospital Management (RAP-HoMe) conducted in all public general hospitals in Nusa Tenggara Barat (NTB) and Nusa Tenggara Timur (NTT) by GTZ Siskes/HRD, Gadjah Mada University (UGM) and Provincial Health Office NTB and NTT in 2006. The results of the RAP-HoMe showed that there is a need for training on Hospital Quality Management in order to improve service management of public general hospitals in both NTB province and NTT province.

GTZ Siskes/HRD, UGM and SEAMEO TropMed as well as NTB Provincial Health Office have collaborated involving also the Ministry of Health of the Republic of Indonesia for the hospital management training course development and implementation, including also Mataram University (UNRAM), Mataram Health Polytechnic (Poltekkes) and Nursing Department in Bima to organize HMT activities: in class training, workplace assignment, and QI Action at hospitals. The HMT book and toolkit have been implemented in two batches of training in NTB. The first batch was conducted in January to December 2008 for three hospital teams; NTB Provincial Hospital, Praya District Hospital and Selong District Hospital. The second batch extended from March to November 2009 involving the four remaining public hospital teams in NTB, namely RSUD Bima District Hospital, Dompu District Hospital, Sumbawa District Hospital, and Tripat District Hospital of Lombok Barat District.

This book is published in order to convey to all relevant stakeholders the importance of continuous hospital management improvement based on quality management with the hope that the model – which involves all relevant staff and use a team approach – can be adopted for future Hospital Management Training elsewhere.

This book is a product of experts from Indonesian universities as well as national and international experts. However, readers' constructive

criticisms and suggestions are most welcome in case of unintended mistakes. May this book and the HMT Toolkit HMT be useful for Indonesian people at large!

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gtz

FOREWORD

Focus on Primary Health Care, as revitalized by WHO in its 2008 Annual Report, is an important way to improve the health status of communities, to increase their own health responsibilities and to bring services close to the population. However, this is not sufficient. In case of emergencies the health system must also provide appropriate secondary level services to save lives. In this context the quality of services in hospitals is crucial to improve health indicators of the population.

Since 1973 I have gained a lot of experience by working on health systems and working in and with hospitals throughout Africa and Asia. In Togo, for example, we could show clear impact on maternal mortality by focusing on hospital improvement, decreasing the maternal mortality ratio from 400 to 62 per 100,000 live births within 6 years (1987-1993) in a defined district in the capital Lome. We proved that the remaining death cases at hospital level were mainly linked to managerial failures within the hospital and its supporting services. That is one of the many reasons why the focus of my work has always included hospitals and their management.

In Cambodia I continued my experience by involving hospital improvement in the overall health systems development. Poor infrastructure and lack of equipment was the initial big problem, but this was followed very soon showings gaps in skills and management.

Indonesia has fewer problems regarding infrastructure and equipment of hospitals and has a large capacity of skilled specialists and medical teams. Nevertheless, good human resources are not equally distributed across the country, and despite improvement in health indicators, the eastern provinces still show high mortality rates and alarming human development index scores. Evaluating hospital performance found that management problems are part of the challenges to overcome.

Hospital Management Training

Strong leadership is one of the main assets for change and ongoing quality improvement. However, this alone is not enough, and it has proved to be unsustainable as leaders are frequently moved around. The Quality Improvement process requires a team, and to make QI a culture requires a critical mass. This has led me to rethink training approaches and to focus on team training rather than individuals. This includes immediate application of lessons learnt through practical exercises, enhancing peer exchange and using coaching in addition to classroom training. This approach was developed and implemented initially in Cambodia under the National Institute of Public Health, where I worked from 1995 – 2003, with assistance from teams from the SEAMEO TROPMED network in Bangkok and Manila. The Cambodian Ministry of Health defined Quality Improvement as one of its priority areas of work for the period 2003-2007 and created a special unit at the MoH to develop specific strategies. Training in Cambodia is now implemented through the National Institute of Public Health (NIPH) and envisages covering all provinces and districts of the country.

Based on this past experience and despite large differences between countries, it was still useful to develop a hospital management training course in Indonesia using an approach similar to that in Cambodia but with different content. I am particularly grateful for the collaboration of Gadjah Mada University, and particularly Dr. Adi Utarini of that team, for contributing very new concepts and focusing on patient safety from different perspectives within the hospital and the health system, thereby bringing patient rights to the forefront and enriching the curriculum.

My gratitude goes as well to all of our Indonesian partners and stakeholders, especially the Ministry of Health in Jakarta, local decision makers, Provincial Health Offices, the local universities and training and education institutions, and especially the hospital teams. We count on them to take full ownership of the QI process and to make the current Course Book available to other provinces to share their experience and to continue advocacy for ongoing QI process and hospital management training.

SEAMEO TROPMED was once more an important partner in the realization of the course development in Indonesia, and we count on them to further promote this course book to other interested countries through their network.

My special thanks go also to Peter S Hill, Associate Professor, International Health Policy, Australian Centre for International and Tropical Health who once again assisted in the final editing and improvement of this book.

My thanks also goes to the German (BMZ) and British (DFID) governments for making funds available so that the training could be developed and conducted. They are also invited to further promote this book.

Dr. Gertrud Schmidt-Ehry, MPH,

Gynecologist and Obstetrician
GTZ principal advisor for SISKES
and HRD projects in Indonesia

PREFACE AND ACKNOWLEDGMENT

Quality improvement in hospitals is an important topic in Indonesia and has been a special focus within the German Indonesian Cooperation in the Health Sector through its Technical and Financial Cooperation Organizations GTZ and KfW since 1999. The realization of the idea to use a more systematic training approach was first discussed when Prof. Ali Ghufron Mukti, Dean of the Faculty of Medicine, Universitas Gadjah Mada, introduced the principal advisor of the two GTZ health projects: Human Resources Development and District Health System Improvement Projects to Dr. Adi Utarini, Director, Master in Hospital Management, in Yogyakarta in 2006. From this starting point, the already existing cooperation between GTZ and UGM, established by Dr. Paul Rueckert, the former principal advisor of SISKES and Prof. Ali Ghufron Mukti in 2000, grew into a fruitful cooperative initiative on hospital improvement.

Dr. Adi Utarini and her team then undertook a needs assessment, using innovative measures and focusing on quality management. The outcome was the idea to develop a hospital management training course, using a team approach, and offering the opportunity for participants to implement what was taught immediately in their own clinical environment.

During a first workshop in 2007 involving several partners not only from Indonesia, the design and approach on how to develop and implement the training in West Nusa Tenggara – NTB, one of the eastern provinces in Indonesia, was drafted. To follow up training development, implementation and evaluation a Core Team was created, including different partners with the following team members:

Drg. Widyawati, MQIH, Head of SDM Kesehatan (Health Human Resources) Private Models sub Unit, Pusrengun /Badan Pengembangan dan Pemberdayaan SDM Kesehatan (National Board for the Development and Empowerment of Health Human Resources; MOH Indonesia

Alih Germas Kodyat, SKM, MARS, Staff, Pusdiklat/BPPSDMK, Pusdiklat /Badan Pengembangan dan Pemberdayaan SDM Kesehatan (National Board for the Development and Empowerment of Health Human Resources; MOH Indonesia.

Dr. Yuwanda Nova, Subdit BYMS di RSU Non Pendidikan, Bina Yan Medik Spesialistik (Medical Care Specialist) - Depkes RI; MOH Indonesia.

Dr. I. B. Jelantik, Head of Hospital Division, Provincial Health Office, Nusa Tenggara Barat – NTB.

Dr. Mimik Astuti, Deputy Director of Education and Training   , Provincial Hospital, Mataram Nusa Tenggara Barat.

Dr. Agusdin, SE., MBA, DBA, Director, Magister Management Program Mataram University, Nusa Tenggara Barat

Dr. Adi Utarini, Director, Master in Hospital Management, Universitas Gadjah Mada (UGM), Yogyakarta.

Prof. Dr. Sandra B. Tempongko, Deputy Coordinator, SEAMEO TROPMED Network Bangkok.

Dr. Gertrud Schmidt-Ehry, Principal Advisor, GTZ SISKES and HRD-Indonesia

Joyce Smith, Team Leader, EPOS/GTZ HRD - Indonesia.

Ki Syahgolang Permata, HMT Coordinator, GTZ HRD - Indonesia.

The team members participating from Indonesia changed during the development of the course, as the membership was based on functions, positions and availability, not on individual persons.

Members from the Provincial hospital in Mataram, especially Dr. Agus Widjaya, the director of the hospital, were very important partners to assure that the training was relevant for the local context and gave feed-back throughout the implementation of the first course. This was also the case for all 7 hospital teams involved in the training and their directors; without them the ongoing training improvement leading to this final product would not have been possible. Special thanks are expressed to all hospital directors (dr. H. Mawardi Hamry, MPPM, dr. Wayan Suardana, dr. Agus Wijaya, MPH, dr. H. Ahmad Faisal, SpA, drg. Ni Made Ambaryati, dr Hj Tini Wijanari, and dr. A.A. G. Kosala Putra) making their staff available for the training and encouraging them to continue and assist to enhance the change and quality improvement process in their respective hospitals. One hospital director, Dr. Ahmad Faisal, pediatrician, was very interested

in this new training and his commitment to improvement encouraged him to be a participant during the whole training course.

Altogether all 7 public hospital teams in NTB from: Mataram, Praya, Selong, Gerung, Bima, Dompu and Sumbawa, fully participated in the training and the assignments, despite also having to continue their daily work. An admirable strong will to make a difference for the patients was evident throughout the training process, involving a large number of other staff in the hospitals. This continued after the training was finished for the first batch, as could be demonstrated when problems were identified and solutions were searched for. Thank you to Eka Junaedi, Rini Kusmardiyati, Lesti Sariyuni, Henny Hardini, Zulkarnain, Elih Sukaryatin, Mustapa, Lalu Jamiri, Mastur, Mar'ah, Marjan, I Dewa Ketut Ariantana, I Ketut Sudarsana, Lalu Tarmuzi Ahmad, Ida Ayu Wayan Maret, Abdul Rahim, Farida, Eis Sulastri, Sahmir, Firman, Ihsan, Fithri Kurniati, Early, Muhtar, H. Ahmad Faisal, Zulkarnain, Isti Wadniyah, Nirwana Malik, H. Dias Indarko, Syaikhul Islam, Hermansyah, Ilmiyati Zain, Maria Alfonso, Saman, Rusmayadi, Ida Aryani, Ulul Azmi Satria Bakri, Nyoman Suarsana, Indria W. L, Arief Suryawirawan. You have all been truly committed to participate in this training.

The University of Mataram hosted the first training course and supported training implementation for the whole duration in 2008. Dr. Agusdin from Mataram University was an important team member of the first training implementation and despite his various obligations tried to make himself available as a mentor to the hospital teams, and participated in all important steps. The second training course being implemented mainly for Sumbawa Island was hosted in Bima Poltekkes, providing generous space and assistance during the preparation and implementation in 2009.

The Provincial Health Director and members of his team were following the implementation with great interest. Gusti Kertayasa, one of the PHO staff facilitators and dr Ketut Sura from Bapelkes in Mataram also participated in all sessions of the second training course, thus being able to keep the Provincial Health Director informed about the content and progress of the training.

The Ministry of Health in Indonesia were able to bring in important aspects of the ongoing health reform and guidelines in Indonesia, especially the newly developed Minimum Service Standards – SPMs.

The key to any training program is how the content is delivered to the participants. We would like to appreciate the hard work of those who are engaged to make this training attractive and enjoyable to inspire the participants: all learning block coordinators (Yodi Mahendradhata, Prof. Iwan Dwiprahasto, Dr. Tjahjono Koentjoro, Hanevi Jasri, Agastya, Prof Laksono Trisnantoro, Niluh Putu Eka Andayani, and Andreasta Meliala); all facilitators (of those that we have not had enough space to address your names); and mentors in this training (Fahmi Husin, Karina Widowati, Hary Agus Sanjoto, Ketut Sura and Etty Kusumaningsih).

The driving force for all achievements, never getting tired of efforts and commitment is Dr. Adi Utarini. Most of the book chapters show her signature and important inputs. She is an example for enhancing team work as shown in her own team and the way she works with others. Her large knowledge on hospitals in Indonesia and open mind for challenges coming up made her the most important asset for the training and ongoing improvement process. To enrich the team, Andreasta Meliala brought his sense of humor and kind attention in the training and coaching classes, while Agastya, applied his profound knowledge in economy and business and his ability to transmit knowledge on this difficult topics to the training participants.

To write the book was a long process and started with a retreat of the authors in Jogjakarta end of 2008, involving also Prof. Peter Hill from Queensland University in Australia. He took over the task to write those parts of general aspects, such as Managing for Change and participated in others. He went through all book chapters, to give advice and to improve the writing where needed.

The following list shows all authors of this book in alphabetic order:

Adi Utarini, dr, MSc, MPH, PhD, Director and Lecturer, Hospital Management, Postgraduate Program in Public Health; Public Health Department, Faculty of Medicine, Universitas Gadjah Mada

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Agusta Ika P. Nugraheni SE, MBA, Assistant Lecturer, Hospital Management, Postgraduate Program in Public Health, Faculty of Medicine, Universitas Gadjah Mada.

Andreasta Meliala, dr, MKes, MAS, Vice Director of Academic Affair Hospital Management, Postgraduate Program in Public Health, Faculty of Medicine, Universitas Gadjah Mada

Gertrud Schmidt-Ehry, Dr. MPH, gynecologist and obstetrician, tropical medicine, Principal Advisor, SISKES and HRD, GTZ Indonesia

Ki Syahgolang Permata, SE, HMT Coordinator, GTZ HRD, Indonesia.

Peter Hill, MBBS, FFAFPHM, PhD, Associate Professor International Health Policy, Australian Centre for International and Tropical Health; The University of Queensland, Australia.

Improved hospital management, in addition to quality services within a functioning health system, is crucial to reduce mortality, especially for women and children, but also for all other kind of emergencies and major health problems as they may occur. Developing and implementing training needs to be supported by appropriate documents, and links to international literature and documentation. For this reason the hospital management trainer team decided, that it would be worthwhile to write a book on hospital management training – new ways to improve services in Indonesia. This book is meant to be a guide to others who want to implement similar training approaches and to focus their training on the patients and their safety within the hospital and its links to the larger health system.

Concerning the structure of this book and how the authors divide the work, overall this book is a joint effort made by the hospital management program at the Faculty of Medicine, Universitas Gadjah Mada and GTZ SISKES-HRD Project in Indonesia. The text begins with a description of the course concept and content (**Chapter One**), written by Adi Utarini and Gertrud Schmidt-Ehry, from whom the ideas for this hospital management training and its overall training approach came. Several aspects in the course design were outlined with the purpose of communicating our thoughts and their actual practices in this hospital management training. This section is particularly relevant for those who are either already engaged in conducting hospital management training or who may be interested to fund and organize such a training program.

For the international communities, the relevance of this training is lifted up through understanding of the context in Indonesia (i.e. hospital situations in a decentralized health system), as described in **Chapter Two** (Background Information) authored by Andreasta Meliala.

Building on the first two chapters, we then set the tone for the need to make real changes in managing hospitals in Indonesia. This is exactly where this **Hospital Management Training** comes in. It is the beginning of a journey to initiate *New ways to improve services* for the patients. Written by Peter Hill, **Chapter Three** emphasizes organization and individual change. Through this chapter, readers are expected to get ready for, and be enthusiastic to introduce and manage changes.

Changes may occur in different levels in the hospital. Inspired by recent literatures in quality improvement, we use four levels to describe the opportunities for which quality improvement can be initiated in a hospital. These are changes in the level of patient/community, service, organization and environment which are then translated into the four learning blocks in the training curriculum, as described in **Chapter Four to Seven**. In addition to initiating changes at these four levels, the level also well correponds to reflect your capacity within the organization and at what level you are comfortable with in the endeavour to make such changes. The framework used and course content was adopted and further developed from the existing curriculum in the master program in Hospital Management, Postgraduate Program in Public Health, Faculty of Medicine, Universitas Gadjah Mada. Adi Utarini, Andreasta Meliala, Agastya and Agusta Ika P. Nugraheni from the Hospital Management Program wrote the chapters to summarize the core content of the training.

As the final chapter, the book concludes with the actual test for hospital managers. It's time to act! Building on the knowledge gained throughout the course, having the team spirit maintained and adequate resources provided, the last chapter (**Chapter Eight**, written by Adi Utarini, Peter Hill and Gertrud Schmidt-Ehry) describes the Quality Improvement Action through the application of Action Research.

In addition to the book there is also a film using a patient story to draw a thread through all efforts to improve hospital management. This can be helpful as an advocacy tool to politicians and decision makers to gain their interest and commitment to invest in hospitals' ongoing quality

improvements. A CD is also available with all training Modules in Indonesian language. The book is written in English in order to be useful as well for other countries within Asia and elsewhere and for the international community. The concept chapter has been translated into Indonesian language and can be a guide and an example on how to develop the training course in Indonesia. The remaining text was not translated, as all details of the training content are available in Indonesian on the accompanying CD.

Gratitude also goes to Karsten van der Oord, who developed the film together with Abdul Haris and helped for layout, leaflets production and finally to make all information available via internet. To prepare the layout of the book in a user friendly way was finalized by Asep Komarudin.

We count on the Ministry of Health Indonesia that this book and the additional tools will find large distribution throughout Indonesia and possibilities to use a similar approach and content will become a possibility for other provinces.

We count on SEAMEO TROPMED to continue to use their network to make this book available to a larger community within Southeast Asia.

We also hope that other international organizations find this book interesting and useful and may support similar training in Indonesia and in other countries.

May this book be a small contribution to the ongoing process in Indonesia to improve the quality of hospitals and thus contributing modestly to reach the Millennium Development Goals. May it help to keep in mind, that hospitals have the honorable duty to give the best services possible at the lowest risk to the full satisfaction of the population in Indonesia.

The Editors and Authors

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ACRONYM AND ABBREVIATIONS

AACN	American Association of Critical-Care Nurses
AFTA	ASEAN Free Trade Area
AHRQ	American Agency for Health Care Research and Quality
AIDS	Acquired Immune Deficiency Syndrome
ANA	American Nurses Association
AusAID	Australian Government's Overseas Aid Program
APBD	Anggaran Pendapatan Belanja Daerah (District Government Budget)
AR	Action Research
ARSI	Asosiasi Rumahsakit Swasta Indonesia (Indonesian Private Hospital Association)
ASEAN	Association of South-East Asian Nations
BAPELKES	Balai Pelatihan Kesehatan (Health Training Centre)
BAPPEDA	Badan Perencanaan dan Pembangunan Daerah (District Planning and Development Board)
BKKBN	Badan Koordinasi Keluarga Berencana Nasional (National Family Planning Coordination Board)
BLU	Badan Layanan Umum (Public Service Enterprise)
BLUD	Badan Umum Layanan Daerah (Local Public Service Enterprise)
CA	Clinical Audit
CEO	Chief Executive Officer
CEONC	Comprehensive Emergency Obstetric and Neonatal Care
CFO	Chief Financial Officer
CNL	Clinical Nurse Leader
COO	Chief Operational Officer
CPOE	Computerized Physician Order Entry
CRM	Crew Resource Management
CT - Scan	Computed Tomography Scanner

Hospital Management Training

DAC	Development Assistance Committee
DHS	District Health System
DOTS	Directly Observed Treatment Shortcourse
DRG	Diagnosis-Related Group
EFQM	European Foundation for Quality Management
ERSI	Etika Rumah Sakit Indonesia (Indonesian Hospital Ethics)
FFEs	Financial Front Ends
FGD	Focus Group Discussion
FMEA	Failure Mode and Effect Analysis
FOCUS-PDCA	Find a process to improve, Organize a team that knows the process, Clarify the current knowledge of the process, Understand the causes of process variation, Select the improvement-Plan Do Check Act
FV	Future Value
GATT	General Agreement on Tariffs and Trade
GTZ	Deutsche Gessellschaft fur Technische Zusammenarbeit (German Technical Cooperation)
HIV	Human Immunodeficiency Virus
HMT	Hospital Management Training
HR	Human Resources
HRD	Human Resource Development
ICD	International Classification of Diseases
ICU	Intensive Care Unit
IDR	Indonesian Rupiah
IHI	Institute of Healthcare Improvement
IOM	Institute of Medicine
IPSRS	Instalasi Pemeliharaan Sarana Rumah Sakit (Hospital Maintenance Department)
IRR	Internal Rate of Return
ISTC	International Standard for TB Care
IT	Information Technology

JCAHO	Joint Commission on Accreditation of Healthcare Organization
LCL	Lower control limit
LPN	Licensed Practical Nurse
MMC	Metropolitan Medical Centre
MoH	Ministry of Health
MR	Moving Range
NGO	Non Government Organization
NHS	National Health Service
NICE	National Institute of Clinical Excellence
NICU	Neonatal Intensive Care Unit
NIPH	National Institute of Public Health
NPV	Net Present Value
NTB	Nusa Tenggara Barat (West Nusa Tenggara)
NTT	Nusa Tenggara Timur (East Nusa Tenggara)
OECD	Organization for Economic Development Cooperation
OMC	Ongkomulyo Medical Centre
OPD	Out Patient Department
PA	Principal Advisor
PAM	Physical Asset Management
PATH	Performance Assessment Tool for quality improvement in Hospital
PDA	Personal Digital Assistant
PDCA	Plan-Do-Check-Act
PDMMI	Persatuan Dokter Manajer Medis Indonesia (Indonesian Association of Medical Managers)
PDSA	Plan-Do-Study-Act
PERMAPKIN	Persatuan Manajer Pelayanan Kesehatan Indonesia (Indonesian Association of Health Care Managers)
PERSI	Perhimpunan Rumah Sakit Seluruh Indonesia (Indonesian Hospital Association)
PHO	Provincial Health Office

POMD	Patient-Oriented Medical care Data
POMDO	Patient-Oriented Medial care Data Organization
PSBH	Problem Solving for Better Hospital
PSI	Patient Safety Indicator
PV	Present Value
QI	Quality Improvement
RAP-HoMe	Rapid Assessment Procedures in Hospital Management
RASK	Rencana Anggaran dan Satuan Kerja (Work unit budgeting plan)
RN	Registered Nurse
RCA	Root Cause Analysis
RS	Rumah Sakit (Hospital)
RSCM	Rumah Sakit Dr.Cipto Mangunkusumo (Dr. Cipto Mangunkusumo hospital)
RSU	Rumah Sakit Umum (General Hospital)
RSUD	Rumah Sakit Umum Daerah (District Hospital)
RSUP	Rumah Sakit Umum Pusat (Vertical Hospital)
SBU	Strategic Business Unit
SC	Steering Committee
SCM	Supply Chain Management
SEAMEO TROPMED	South East Asian Ministries On Tropical Medicine
SISKES	Sistem Kesehatan
SOP	Standard Operating Procedure
SPM	Standar Pelayanan Minimal (Minimum Service Standard)
STP	Segmenting, Targeting, and Positioning
SPMKK	Sistem Pengembangan Manajemen Kinerja Klinis (Clinical Performance Development Management System)
SWOT	Strengths, Weaknesses, Opportunities, Threats
TB	Tuberculosis
TBA	Traditional Birth Attendant

T-CAB	Transforming Care at the Bedside
UAP	Unlicensed Assistive Personnel
UBHT	University of Bristol Hospitals NHS Foundation Trust
UCL	Upper Control Limit
UGM	Universitas Gadjah Mada
UK	United Kingdom
UNAIR	Universitas Airlangga (University of Airlangga)
UNRAM	Universitas Mataram (Mataram University)
USA	United States of America
UU	Undang-undang (Law)
VA	Verbal Autopsy
VIP	Very Important Person
VOC	Vereniging Osst indische Compagnie (Royal East Indian Company)
WHO	World Health Organization
WISN	Workload Indicator Staffing Need
WTO	World Trade Organization
ZOPP	Ziel Orientierte Projekt Planung (Goal-oriented project planning)

Hospital Management Training

Chapter One

Inspiring hospital teams for quality services through hospital management training : Introduction to the course concept and content.

Authors

Dr. Adi Utarini, director of Master of Hospital Management Program, UGM – Yogyakarta Indonesia

Dr. Gertrud Schmidt-Ehry, principal advisor for the two projects SISKES and HRD, GTZ Indonesia.

Overview of chapter:

This chapter explains how the hospital management training course was developed, why this approach was used, how the process was perceived and how implementation worked and what lessons were learned to improve subsequent courses. This first course implementation has been undertaken as a pilot, with errors expected, and adjusted for the second course.

The chapter should be helpful for those who wish to implement this course elsewhere in Indonesia, or in other countries. For participants, it gives a better understanding of the context of the course, before getting into the content of the modules.

Content

A.   Background information on the course development

The Hospital Management Training (HMT) course was developed in the context of two projects financed by the German and British Government and implemented through GTZ and the Indonesian Ministry of Health and its local representatives. The overall objective of the Improvement of the District Health System in Nusa Tenggara Timur/Nusa Tenggara Barat (SISKES) project is that the population in the provinces of Nusa Tenggara Timur (NTT) and Nusa Tenggara Barat (NTB), especially the poor, women and children, use quality health care services. The objective of the Human Resources Development (HRD) project is that personnel management of appropriately qualified health personnel in NTT and NTB meets local requirements and national guidelines. Thus both have quality of services and quality of health staff as a common point of intervention. Each of the projects uses a multilevel approach and is aligned to national policies and provides feed back from local experiences to the policy development level. SISKES places a priority on maternal and neonatal deaths through enhancing systematic maternal auditing on cases of maternal death, and draws attention to how we can learn from medical errors in hospitals. Through training of hospital management teams, focusing on behavioural change, staff can become increasingly patient oriented and introduce changes such as the reporting of medical errors. The team training approach is aimed at behavioural change. Small quality improvement action projects focus on immediate implementation of newly acquired skills. Poor management, as well as poor clinical skills and missing or poorly maintained equipment and materials contribute significantly to patient deaths. Despite the impact that improving quality services in hospitals can have on maternal and neonatal death, few international donors provide support for hospitals in their projects. With the available resources, in the context of our project, it was possible to develop a new training course approach and to pilot test it, before drawing conclusions and preparing broader use of it. A similar concept had been initiated by the present principal advisor of the two Indonesian projects in Cambodia in

2000 for district/provincial management teams, and in 2003 for hospital teams in the National Institute of Public Health (NIPH) involving SEAMEO TROPMED (South-East Asian Ministries of Education, Tropical Medicine). The hospital assessment in Indonesia showed similar problems in the quality of the hospital management, motivating replication of the project here.

In addition to SEAMEO TROPMED a team from Cambodia was involved in the final review of training impact 6 months after completion. This gave the opportunity to exchange experiences and learn from each other, especially seeing Cambodia's experience during a longer period of time and how the culture of quality improvement was maintained in a broader context.

B.   Training concepts

The demand for developing hospital management training in Indonesia is a combination of the number and growth of hospitals, the continuous need to produce competent hospital managers, and the availability of competent educational institutions capable of delivering such training. The choices for candidates seeking hospital management training may vary from overseas' master degrees in hospital management, in-country master programs in hospital management offered by public and private universities in Indonesia, and training programs or short courses organized and delivered by hospital and health care associations, Ministry of Health, and other institutions.

These choices for hospital management training have several strengths and limitations. Overseas master courses on hospital management training lead to high qualifications at the expense of the participants' absence from work for a period of 1-2 years. On the other hand, they have opportunities to exchange experience with participants from other countries, being exposed to a different environment, and gaining more international perspectives and new ideas to be taken home. This opportunity may not be accessible for those who work in remote provinces and those with limited English language skills. In-country master courses on hospital management are more accessible for hospital managers. However, they still require full or partial work leave, ranging from 3 weeks to 3 months each time. On returning

to their workplace, participants may lack the support and understanding that would enable them to implement what they have learned and it is certainly difficult to start a process of change from only one individual. The remaining options are limited to short-courses or training programs which do not lead to formal qualifications, and are rarely accredited by recognized institutions. The topics offered vary, with the consequence that many institutions offer similar topics (such as BLU – Public Enterprise Hospital, unit cost etc.), resulting in duplication of content in different short courses, or a situation where topics needed by participants are not offered in the training programs. In-house training program is another possibility, given adequate financial and human resources.

NTB suffers from a high staff turnover, limited resources, and less individual power to start change processes, as do other provinces in Indonesia. On the other hand, NTB province has one of the lowest Human Development Index in Indonesia and urgent improvement, especially in the health sector, is needed. In the past the many fragmented training courses or sessions have been offered - often also linked to projects. These have had little or no ownership from the local teams, and have been unsupported by decision makers and politicians. As is the experience in other similar situations, they have not resulted in the desired improvements, with staff not motivated to implement change. Based on these experiences, an innovative concept for hospital management training that addresses these issues has been developed. The main concepts of the HMT, as piloted in NTB are the following:

a. The training materials have been developed in a modular form
b. The training has been accredited by a university or training institution, and the modules provide credit towards other degree programs
c. An articulation pathway has been developed to allow participants to continue their training to complete a Masters degree. The pathway maps the content of the training modules and quality improvement action plan and implementation, against the curriculum of the Masters program, identifying the additional coursework, research and thesis writing needed to complete the Masters degree
d. Successful participants who meet University enrolment criteria are rewarded with the opportunity to continue their training in order to get a

Master's degree. This takes into account existing credits accumulated through their training in this course, and undertaking the required additional courses.

e. The training provides a basis for advocacy for objective educational criteria for posting, such as requiring a Masters degree for leaders such as hospital directors in the health system. Where the training is shown to be of practical use, it provides a rationale for recommending graduates for higher level positions after successful training

f. The demonstrated benefits of the training have been used to negotiate with employers to maintain staff in their positions for longer periods, in order not to disrupt change and improvement processes

g. The training has developed a career development plan for training participants that enables them to apply the content of their course to improving hospital management practices

In order to develop these concepts into a concrete training plan, several institutions were first identified and their potentials were listed. There are five main institutions that have played significant roles in this training. These are:

a. SEAMEO TROPMED network, with international experience and accreditation, and a known history of building up capacity overseas in neighbouring countries, e.g. Cambodia, Laos and Vietnam

b. UGM (Universitas Gadjah Mada), with an existing master course in hospital management and high commitment to quality education and training

c. UNRAM (Universitas Mataram), a public university in Mataram that has a good knowledge of local context and is able to organize training courses

d. HOSPITALS in NTB province, that have started with some quality improvement activities and are keen on going for BLU, some equipped with staff who already have Master's degrees and can assist as internal coaches for the team

e. GTZ project staff, bringing in broad international experience in practical hospital management, its problems and possibilities for change and having initiated a similar training course concept before

A triangular training support model between SEAMEO TROPMED-UGM-UNRAM has been developed and their roles were further elaborated (Figure

1). SEAMEO TROPMED shared their experience from other countries in South-East-Asia, being in charge of organising and accompanying the benchmark visit of stakeholders in neighbour countries, accompanying the course development during important milestones and being involved in the Hospital evaluation 6 months after course implementation. Through this they have a role in quality assurance and can provide international accreditation. UGM developed the tailor-made curriculum based on the hospital needs assessment described later (Rapid Assessment Procedure in Hospital Management or RAP-HoMe), undertook preparatory workshops reflecting these needs, and developed the current curriculum of the hospital management master degree. They conducted training of trainers, were involved in selecting the participants; seeking accreditation of training modules; delivering training sessions; supervising quality improvement projects and implementing the final examination; and developing continuation plans for a Master's degree. UNRAM was involved in the needs assessment, curriculum development, training process, coaching and assisting in quality improvement action project and the final examination and organized the delivery of training under quality assurance. GTZ project staff were involved in all important concept development steps and in the implementation of the second training course covering all remaining public hospitals in NTB province.

Figure 1. The triangular training support model

SEAMEO
Assistance in curriculum development
Quality assurance
International accreditation; partnership

HOSPITAL
Training needs assessment
Internal team coaching
Quality circles
Proactive training participation

UGM
Tailor-made curriculum development,
TOT, examine jury
Twinning with local universities, coaching, Accreditation of modules
Follow up for master degree

UNRAM
Needs assessment
Curriculum development
Training conduction
Supervision of QI project
Rolling out of accredited training under quality assurance.

Previous experience in training activities has revealed the importance of ensuring an appropriate atmosphere beyond the training itself, and winning the support from local government has to be seen as crucial to successful training. For this training, the following cycle represents critical steps leading to optimum achievement.

ADVOCACY FOR QUALITY MANAGEMENT

First, advocacy for quality management: Advocacy was carried out with local decision makers in several stages and activities to secure their interest, commitment and support for the concept of quality management. A hospital benchmarking activity involving stakeholders from local governments, hospitals, facilitated by GTZ and SEAMEO TROPMED, was organized prior to training activities. This gave hospital managers and politicians an opportunity to see quality management working out in other countries, and what that could mean for their respective hospitals. A written commitment from the local government and hospitals was required during the selection process in order to maintain the staff in their current positions and to demonstrate their commitment towards change and quality improvement.

Second, training content should be based on local needs and developed according to national and international standards. This principle was applied in this HMT through a training needs assessment (RAP-HoMe) conducted in

TRAINING CONTENT SHOULD BE BASED ON LOCAL NEEDS

18 hospitals in NTB and NTT provinces. The main instruments used for the assessment were the hospital licensing requirements, the European Foundation for Quality Management self-assessment, hospital performance indicators and felt-need training assessment. Each hospital was visited by 3-4 surveyors (consisting of combined UGM and local surveyors) for 2-3 days. For measuring hospital inputs, the Ministry of Health (MOH) standard was applied as this is mandatory for all public-private general hospitals. Among the 18 hospitals reviewed only 66.4% and 63.8% of the hospital licensing requirements were met. Out of the four components in the hospital licensing standard, the lowest compliance was in the areas of governance and management (Utarini & Jasri, 2006). The findings were presented in several occasions and discussed in follow-up workshops organized in NTB and NTT provinces.

BUILD LOCAL CAPACITY THROUGH PARTNERSHIP

Third, build local capacity through partnership and twinning between a well recognized national university (UGM) and the local university (UNRAM). The local university has been involved throughout all processes from preparatory, implementation, delivery of training courses, monitoring of quality improvement action project up to final training evaluation.

Fourth, train the hospital teams as change agents with the main intention to plan and initiate improvements in the hospital.

TRAIN THE HOSPITAL TEAMS AS CHANGE AGENTS

Figure 2. Principles for Training Development and Implementation

Advocasy for QM towards local decision makers to get their interest, commitment & support

Training based on local needs according to National & International Standards & what people want

Build up local training capacity through partnerships and twinning

Build up a critical mass to introduce a culture of quality managements at the hospitals

Train teams to reach change Change agents -Champions for benchmarking

During the HMT, the hospital teams were given an opportunity to apply what was learnt in their training through a quality improvement action project. The purpose was for the teams to experience the complete process of problem analysis, planning, through to evaluating the change, and to build up a critical mass to introduce a culture of quality management at the hospitals. This is carried out through a structured interaction between the hospital teams, hospital staff, tutor, trainers and stakeholders at the end of each training block and quality improvement action project (see training design below).

A roadmap for HMT was then prepared in reference to the above principles for training development and implementation. The roadmap consists of the following activities which will be described in subsequent subheadings:

1. Advocacy at the local level
2. Curriculum development
3. Orientation of Stakeholders and Training of Trainers
4. Implementation of first training batch, including team building measures and the QI action project
5. Training Evaluation, final examination and accreditation
6. Impact assessment 6-12 months after training completion
7. Review of the first training, lessons learned and the way forward

The overall training objective and expected outputs had been defined when the planning for the training started and the first ideas on a possible concept were further elaborated.

Figure 3. The overall objective for the training course and expected outputs

Objectives	Expectations	Measurement
Objective of the Training Course	Improve managerial skills and attitudes towards quality management at the hospitals in NTB & NTT to reach BLU status and based on international standards.	✓ # of successful candidates ✓ Cost per succesful training ✓ Reaching the targets of the SPM's ✓ Patient satisfaction and health outcome ✓ Reaching BLU status: full accreditation.
Direct expected results	Appropriate knowledge and skills to implement quality improvement measures in the hospitals.	✓ Post-test for each Module, final examination, ✓ Implementation of QI measures ✓ Differences between pre- and post-test will measure the ability of the trainers and the concept.
Expected Outputs/ Products	✓ Training tool kit containing Modules, concept and process developed ✓ Improved organization and management of hospitals ✓ Successful implementation of quality improvement project.	✓ Tool kit available and disseminated ✓ Survey to assess management performance difference before and after training & one year later ✓ Evidence on quality improvement based on defined indicators.

1.   Advocacy for HMT

In a decentralized health care system, the local government has the authority to designate and deploy human resources. This can be problematic if job placement is carried out based on political considerations rather than competence. Therefore, the commitment of local stakeholders to retain HMT participants in their hospitals for at least a certain period of time (3 years) is critical for the training to have an impact on improving hospital services. The strategy applied for advocacy was to organize a benchmark visit to neighboring countries, participated by a team of local government officials, hospital directors, assisted by GTZ staff members.

The general objective of this benchmark visit was to provide technical support and give inputs based on the international experience from ASEAN countries through the SEAMEO TROPMED network in the development and implementation of HMT. The specific objectives were:

1. To expose decision makers to hospital performance using ongoing quality improvement approaches in Thailand and the Philippines.
2. To give them a chance to discuss with important stakeholders from the countries visited issues regarding health human resources policy and management, and the development and sustainability of good quality in hospital services.
3. To obtain commitment from the benchmarking delegates subsequently to support HMT and the quality improvement project, to mobilize local funds for the next training batches, and most importantly to have their commitment to sustain HMT participants in their hospitals after training.

With adequate support and a well-programmed benchmark visit, this tool for advocacy has brought some new perspectives to the delegates. New ideas and innovations for better health services gained from the visit, and supported by current knowledge of the health systems in Indonesia has been a strong motivating factor for the delegates to commit to improving the hospital services. Those letters have been signed by the assistant Bupatis (assistant to local head of government), Bappeda (Planning Department) and Hospital directors. Given the fact that elections were ongoing during the training and that the agreement did not include the maintenance of hospital directors in their positions, careful monitoring was needed to

track the extent to which the commitments were fulfilled, despite these changes. In the advocacy tour which was conducted in preparation for the second training batch, we also requested that the province/districts retain the hospital director in their position. This second advocacy tour covered all remaining districts in the province. The tour included the UGM team, PHO representatives, the GTZ team, as well as the hospital director from the provincial hospital together with one former HMT participant. As a result, we were able to gain interest and commitment from all hospital directors and local political leaders and parliamentarians.

During the implementation of the HMT course, a film was made based on a patient story, told by the sister of the patient, as a narrative focus throughout the film. Although the story finished with the death of the patient, it has been powerful in demonstrating in concrete terms how the training could address some of the of problems causing delay in the management of the case, and showing what the teams have learned and started to implement that will improve the situation. This film will be useful for further advocacy with decision makers, hospital directors, and also with the broader population, so that they can see that the hospital teams take what happens seriously. This could form the start for a new dialogue between the hospital, the patients and the community.

Box 1: Story of a horse-cart driver

"He was a real village person, a horse-cart driver. He was quite a naive sort of guy, couldn't really do much else. When he felt ill we both stayed one night and afterwards I took him to the hospital. Around this time we brought him to the hospital, we waited so long in the emergency ward of the hospital, waiting for blood and other things. We had to buy 3 bags of blood, but we did not have any money so I went home again to borrow money, I borrowed Rp. 400.000 to buy blood.

At first when it started to get worse, he came to me and I brought him to the Puskesmas. But first we had to organize a letter for free healthcare. To get this letter we had to wait for hours and hours, and I had to go back and forth several times between the Puskesmas and my house to get all sorts of things. And in the meantime my brother-in-law was bleeding to death in the hospital...

[And the administrative procedure?] To organize things I had to walk up and down from the 3 floor about 5 or 6 times. When one nurse gave a letter, the other nurse upstairs said it was the wrong one, 'why are you giving me this he said?' I said 'I don't know. This is what they gave to me downstairs'.
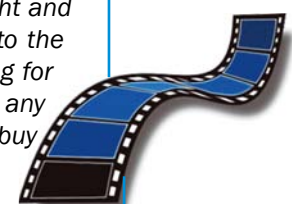
○ **Box 1: Story of a horse-cart driver - continued**

[How long did it take before your brother in law was treated?] Waa, very long, the doctors were busy phoning left and right, my brother in law was in bad pain, he was urinating blood.

[Wasn't he treated?] There were lots of doctors, but also lots of patients. In the emergency room that was where we waited for such a long time.

[But after giving about half a bag of blood he already died. And the blood was still frozen you said?] Yes, they had to warm it up first, it couldn't be used instantly, it was still frozen, came right out of the freezer. [And he was bleeding heavily?] Yes and this young doctor was asking all sort of things like: 'how long has he been like this?' I answered 'already quite long but never as bad as this'.

[And in the end he died?] Yes, I went home for a shower and got a phone call that he had died.

But what really surprised me is that when he was in so much pain it didn't show on him, even when he died he looked so peaceful. His face looked so normal, just a little pale that's all."

2.   Curriculum Development

The curriculum for this training adopts the conceptual framework applied in the new curriculum of the hospital management master program in UGM. In the new curriculum, the conventional approach of management as commonly structured in business schools was no longer applied. One cannot find subjects such as human resource management, marketing management, information management etc. as subjects in the curriculum. Here, the curriculum is not structured according to the perspective of hospital managers (i.e. based on managerial functions), but from the patient perspectives.

The two main resources that have contributed significantly during the conceptual phase in developing the curriculum for the hospital management master program were Mintzberg (2004) and Berwick (2002). Mintzberg (2004) clearly points out the general mis-match in the business school curriculum, what is actually needed to enable managers to learn as part of their personal and organizational growth and development, and how can it be designed and delivered in a positive learning atmosphere. Eight basic propositions for management education are proposed by Mintzberg (2004) and the key messages are the following:

- Restricting management education to practicing managers
- Gaining learning experiences and feeding them back continuously to the workplace
- Solving problems in a thoughtful way
- Reflecting managers' experiences in the light of conceptual ideas
- Sharing competencies to raise managers' consciousness about their practice
- Stimulating further learning through reviewing its impact on the organization
- Blending together all learning elements into a process of experienced reflection
- Creating an educational program with flexible facilitating

The second concept was the 'chain of effect' in improving health care quality developed by Berwick (2002) in the Institution of Healthcare Improvement, USA. This chain takes patients' experiences further to be the fundamental source of definition and improvement of quality. The inter-linkages between the patients' experiences and the health care system is described under four levels of interest: the experience of patients and communities; the functioning of the operational units of care delivery (or called microsystems); the functioning of the organizations to support the microsystem; and the environment of policy, payment, regulation and other factors that shapes the organizations. Each level interacts, and changes at the higher level are necessary to produce satisfactory outcomes with the final intention to tie quality issues more closely to patients' and communities' experiences.

Figure 4. The chain of effect in improving health care quality (Source: Berwick, 2002)

Patient and Community	**Experience**	**AIMS**: safe effective, patient-centered, timely, efficient, equitable
Micro-system	**Process**	**SIMPLE RULES/DESIGN CONCEPTS**: knowlegde-based, customized, cooperative
Organizational Context	**Facilitator of Processes**	**DESIGN CONCEPTS**: HR, IT, finance, leadership
Environmental Context	**Facilitator of Facilitators**	**DESIGN CONCEPTS**: financing, regulation, accreditation, education

Using the resulting UGM curriculum of the Master's in Hospital Management, further adjustments to improve its relevance to the local context for hospitals in NTB province were made. Several inputs were then incorporated in the final HMT curriculum. These were the findings in the RAP-HoMe carried out in 2006, feedback from curriculum review workshops involving the participating hospitals and key institutions in the triangular model, and discussions with UGM and UNRAM trainers.

2.1   Training Competence

At the end of training, the team should have the following competences:

a. Understand and apply hospital safety in order to identify and measure safety issues

b. Design and improve processes at the micro level care delivery system

c. Understand organizational factors and identify the need for changes at the organizational level

d. Increase the need to have leadership attributes and improve managerial skills to enable the hospital teams to plan, implement and evaluate changes

e. Be able to involve the higher management of the hospital in the overall training process

f. Act as change agents and implement quality improvement actions

2.2   The training curriculum

The curriculum places the patient (and community) at the centre of hospital management, in the HMT curriculum. It addresses hospital management topics at each different level within the hospital, using the patient's experience as the logical basis for improvements in operational units that deliver care. It then links those experiences to organizational issues and the broader environment in order to facilitate change at the operational level. This allows participants to deal with the same topics several times, but from different points of view.

The learning blocks in the curriculum start with putting the patient and community first, in a block named 'Patient Safety and Customer-focused Services'. This block integrates the concept of patient safety and customer-focused services into the everyday life of the HMT team. Participants are expected to comprehend the complexity of hospitals and the competition they face, and to identify dynamic changes faced by their hospitals. The concept of patient safety and customer-focused services should be internalized and communicated to the organizations and their implications for managing the hospital at the operational and organizational level discussed.

The principles of patient safety and customer-focused services are then applied at the unit or service level, whereby smaller operational units in hospitals deliver the actual care to the patients (or known as the 'microsystem' level). Through the clinical management system, hospital staff make direct personal exchanges with patients in different units. Patients may obtain services at the outpatient unit, emergency unit, inpatient unit, laboratory unit, radiology unit, pharmacy unit, and many others. If successful, this exchange produces the desired feelings of satisfaction, positive experiences, trust and loyalty of patients and patients' families to the hospitals. Outcome of care and costs associated with delivery of care are thus determined by performance at this level, which is in fact the core business of hospitals.

Improving clinical performance is the key message given in this second learning block. In this block, participants are exposed to complexity in problems related to management, service and risks in order to design managerial and service processes at the microsystem level. The ability to implement, monitor and evaluate managerial processes and services are critical for managing risks and improving quality of clinical services. Various concepts in the area of clinical governance, service quality management, patient rights and professional ethics, clinical information systems, logistics, human resources, nursing management, managerial economics, finance, are discussed during this learning block, and supported by the development of adequate managerial skills. In addition, interdependency between the service-unit level and the organizational level is also explored. Obviously, it is only possible to achieve good clinical performance if this is facilitated by a well-functioning organization.

Figure 5. The Curriculum Logic in Hospital Management Training

HMT:	the	Curriculum	Logic
Putting the patient first	Improving the clinical performance	Creating a well functioning hospital	Linking hospital to the health care system
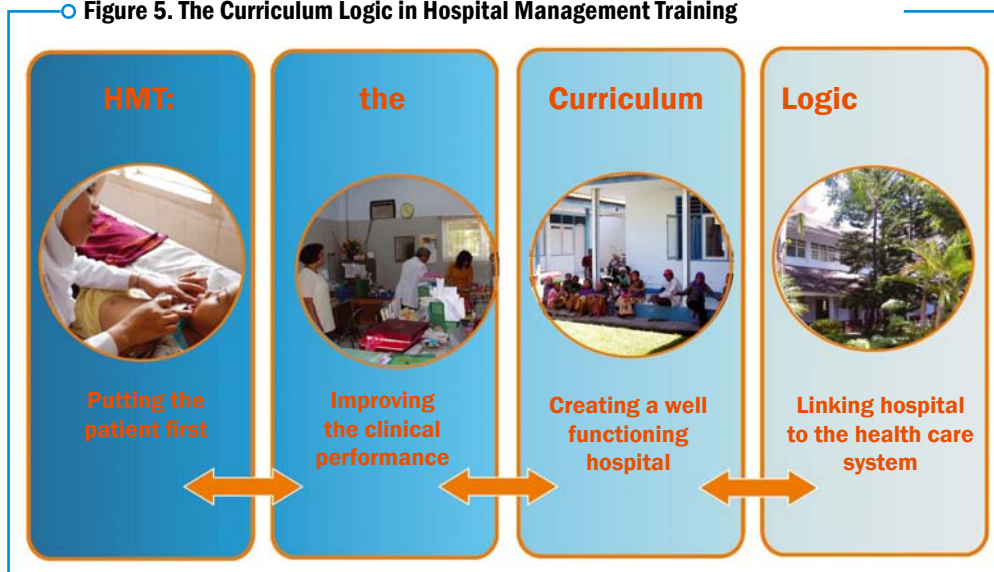
Logically, the next learning block exposes the participants at the organizational level to issues concerning performance and functional management systems. The scope of learning covers marketing management, financial management, production and operation, human resources and accounting, all applicable at the hospital level. In this third learning block, participants are expected to use the principles of business and management to solve problems for increasing hospital performance and to improve professional behavior that will support good governance in hospital.

The survival of hospitals does not only depend on their performance in business and functional management systems, but is also affected by their external environment. The focus of the final learning block (block 4) is linking the hospital to the health care system, referral between the different levels, interference caused by these linkages and factors in the external environment affecting their customers. In this block, participants are required to analyze the hospital business environment (external and internal) in order to formulate a strategic plan and a business plan to increase the hospital performance. The scope of learning consists of three main areas, i.e. hospital environmental analysis (i.e. changes of hospital funding and regulation), strategic management (consisting of strategic management process, formulation of strategy and evaluation of strategic plan) and a business plan for a public service institution (called Badan Layanan Umum in Indonesia).

2.3   Training modules, case studies and assignments

The curriculum and modules were adapted from the Master program in Hospital Management in UGM. In response to inputs from stakeholders as discussed in the curriculum workshop, the following modifications were made for this training:

■ **Curriculum**: the original curriculum consisted of 6 blocks. For the purpose of HMT, the final learning block of research method and statistics was completely omitted as this was geared toward academic exercises for the thesis requirement. In addition, learning block 5 (leadership and managing change) was integrated into the previous block on strategic management and leadership.

■ **Sessions and modules**: After adjustments in the curriculum were agreed by the core team and other stakeholders, the number of sessions and modules were adapted accordingly. The number of sessions was reduced in each learning block without affecting the overall understanding and coverage of the learning block. Modules were rewritten partly or fully from the existing modules to increase readability of the text and the ease of comprehension of the content in order to suit the needs of HMT participants better.

Case studies (short and long cases) were also integrated into the training materials. Cases and assignments were used in different ways to enhance learning. The learning block on patient safety and customer-focused services applies short-cases derived from the news, articles or participants' experiences as trigger discussions for sensitization of patient safety problems. These cases were included in the trainer's presentations. The assignments further deepen the participants' awareness of patient safety issues in their own hospitals. Participants were asked to select a certain unit (e.g. emergency, pharmacy, laboratory, inpatient etc), to communicate patient safety and customer-focused services for that particular unit, and finally to identify and analyze patient safety problems with the unit staff.

In learning block 2 (clinical management system), a long case was specially developed for this training which illustrates the complexity of hospital operations in delivering care to patients. This case was presented in the beginning of learning block 2, as it also demonstrates the need to appreciate and comprehend the broad range of issues relevant to

managing the clinical service. For illustration purposes, the case summary is presented below:

> **Box 2. Clinical management system: a case on obstetric emergency care**
>
> **WHAT WENT WRONG?**
>
> *Satiti, a pregnant woman of 25 years of age was brought by her sister to the emergency department at 6.45am with vaginal discharge and bleeding. During antenatal care with a midwife, she was told that she has twins in this first pregnancy. She was encouraged to deliver the babies in the hospital. Upon arrival at the emergency, Satiti waited for about half an hour before a nurse came to ask few questions. She was then taken with an old screechy patient carrier to the labor room, which is quite far from the emergency room.*
>
> **WHAT PROBLEMS CAN BE IDENTIFIED?**
>
> *Arriving at the labor room, again she had to wait for half an hour due to shift rotation (at around 7.30am). Finally, a midwife came to examine her. Without wearing gloves, the midwife did a vaginal examination and said that she was at 1-2 cm cervical dilatation. After examination by an obstetrician, Satiti was allowed to have a normal delivery as both the mother and the babies (with normal weight and presentation) seemed in good condition. There was no indication for cesarean section.*
>
> **WHY DID SATITI DIE?**
>
> **HOW COULD THIS DEATH BE AVOIDED?**
>
> *Around 2.20pm, the babies were born, weighing 3200 gram each. Soon, Satiti experienced heavy bleeding and the doctor ordered an IV line to be inserted and gave a 10 unit oxytocin injection. Bleeding continued. External and internal bimanual compression did not help. Finally, a hysterectomy was planned and the family was urged to look for blood donors. The hospital gave 1 blood bag and the family bought two more bags at 6pm and another one at around 8.30pm.*
>
> **WHAT ARE THE MANAGERIAL PROBLEMS?**
>
> *Preparation of the operating theatre took 2 hours. There was no surgical theatre in the emergency room. The hospital had already proposed this to the local government, but only 10% of the budget was available. The surgery was performed between 7.15pm and 8.15pm. Satiti was immediately transferred to the ICU before she finally passed away at 6am the following day.*

At the end of this second learning block, an assignment was given to enable the participants to describe aspects related to the clinical management system. These are, for example, client experience, identification of needs and expectations, outcome of services, and many others. Participants are allowed to choose a unit providing direct services to the patients. Conclusion and recommendations were then given by the participants to improve the current services at a dedicated unit of the hospital.

Cases in the functional management system learning block were applied differently. The content of this block was designed according to the managerial functions performed in hospitals, such as human

resource management, marketing management, finance, accounting, quality management, hospital information system, and physical asset management. Therefore, cases (long and short cases), exercises and assignments were developed referring to certain managerial functions. Two long case studies were developed by the local partner (i.e. University of Mataram) to give more emphasis to local situations. One case was developed on consumer behaviour (marketing case study) and another case was written on the insensitivity of staff (human resource case study). In addition to these case studies, short cases were also used during classroom teaching for the purpose of brainstorming the problem and exploring concepts that needed to be learnt. Examples of the short cases are as follows:

Box 3: Examples of cases for functional management system: delay in surgery and undertilization of medical equipment

WHAT WAS WRONG?

A women aged 40 years old was scheduled to have surgery for her kidney stone problem. The patient was taken to the operating theatre. After waiting for one hour, a nurse approached the family and gave them a prescription. The family had to go outside the hospital because the drug was out off stock in the hospital. Due to this problem, the surgery was further postponed.

HOW COULD THIS SITUATION OCCUR?

Why did the patient have to wait in the operating theatre? How could the hospital run out of stock for that drug?

A hospital decided to buy an expensive item of medical equipment. After a while, it was found that the equipment was underutilized.

For the final learning block on strategic management and leadership, short cases were used to illustrate the steps in developing a hospital strategic plan. In the assignment, the HMT team was then asked to choose between developing-revising a hospital strategic plan or developing a business plan. The format for a strategic plan and a business plan was given to the participants.

Overall, the following materials are available for HMT participants:

- Course plan
- Training modules and session plan
- Case studies
- Assignments
- Trainer's presentations

3.   Orientation of Stakeholders and Training of Trainers

Before the training starts, a meeting with all hospital directors and other important stakeholders needs to be held to remind them again of their commitment. It also provides an opportunity to reiterate the message that not only the participants profit from the training, but that all hospital staff will be involved in improving quality through implementation of what has been learned and that this should lead to start an ongoing process of quality improvement. Hospital directors need to keep informed and to support the process; if not it will be difficult to reach a critical mass that will ensure sustainable change. This should not be a problem as hospitals were already committed to quality improvement and had commenced change activities, even before the HMT course started.

Increasing the capacity of local universities is important for rolling out of training and further training and/or education development that use new approaches and content. Twinning lecturers from UNRAM with lecturers from UGM was another important way to transfer knowledge and approaches, and have an impact on local institutions. But their participation is not without challenge, as they may not see the usefulness of taking up new approaches without immediate benefit and due to their high workload with other routine programs may not be able to meet their commitments.

For the Training of Trainers or initiation of the local university lecturers, specific attention to the training content, as well as the training methodology, is required. Clear delegation of tasks and responsibilities needs to be agreed upon. All modules should be completed before training commences, with the lesson plans and methodology worked out together. The local university trainers have an important role in the follow up of the hospital teams in the implementation of homework assignments, and in ongoing coaching for participants who need to practice their newly gained skills. This opportunity can also be used to clarify any issues not well understood during the training, to deepen theoretical knowledge and to link it to their daily work. UGM could then use ad hoc visits to assess the quality of the coaching and give advice for improvement. Team training requires particular attention and careful preparation, as universities conventionally construct education programs with a focus on individual, rather than team learning. Shortening the Training of Trainers and the attention that can be

given to them because of time constraints may result in later inefficiencies and a loss of quality.

4. Training process and implementation

4.1 Team approach

The training activities should be part of a larger effort to ensure real improvements to the advantage of patients seeking care in hospitals. Their benefit should go beyond the impact on increasing individual competence, as commonly experienced in training targeted to individuals. There is often a lack of monitoring and supervision to support practice of the knowledge and skills gained in the students' work setting, and a mismatch between competence and job description in the organization. These factors, as well as high staff turnover, further contribute to the limited impact of training on increasing staff performance.

Applying a team approach, there is a better chance to stimulate the organization by sharing of learning experiences continuously throughout the training process. Specifically, intensive communications between HMT teams and their colleagues in the hospitals occur during assignments at the end of each learning block, presentations of the results to hospital staff in each hospital, and finally during the quality improvement action project.

Team composition also needs thoughtful consideration. Its composition should reflect the complexity of the problems faced and ensure that there is sufficient decision making capacity within the team to solve problems. If their structural positions are too low in the hierarchy, their capacity to make decisions is more limited. Similarly, if the team members consist of those in charge of clinical services only, problems related to finance, logistics etc. may not be familiar to them. Therefore, the team should represent key functions in the organization, such as clinical services, finance, logistics and functional staff (medical doctors, nurses etc.). The size should neither be too little nor too large, i.e. between 5-6 persons per hospital and no larger than a team of ten. The team size should not affect the current functioning of services in the hospital.

4.2 Hospital and team selection

This training is targeted at hospital management teams at the level of senior to middle managers, composed of health professionals (medical doctor, nurse or other allied health professionals), management teams in charge of medical services and accounting or logistics. Participants may either already hold positions within the management structure or be considered as future managers. The training also provides women an equal opportunity to move up in the hierarchy, once they have successfully completed the training.

The selection of public hospitals is the first step in the selection process, consistent with the priority of aiming to improve services for the public. Selection criteria were developed to select both the hospitals and the participants. For selecting the hospitals, the criteria were:

■ Letter of intent, consisting of: description of improvements undertaken in five areas assessed in Rap-HoMe (i.e. input requirement, performance, staff satisfaction, patient satisfaction and finance), list of proposed participants (6-8 persons, 40% female)

■ Commitment letter from the local government to retain the participants to work at the hospital for at least 3 years post-training

■ Commitment letter signed by the proposed participants and hospital directors to participate in the training

■ Completion of form for each proposed training participant

Figure 6. Provincial hospital organogram and position of training candidates
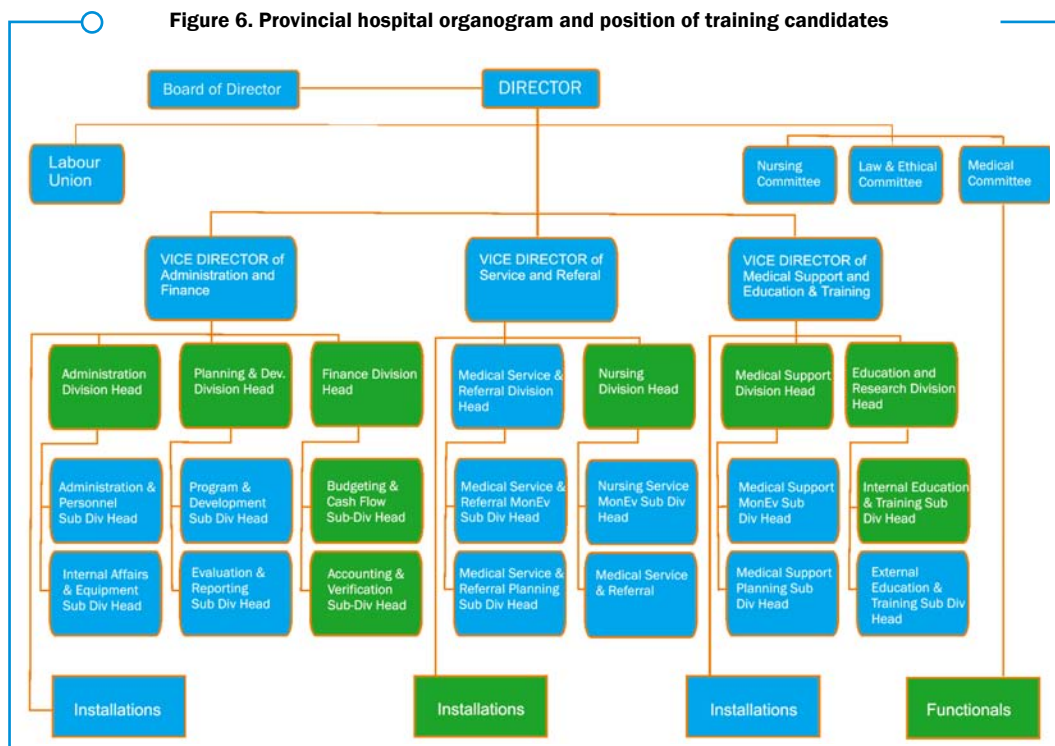
Figure 6. Provides an example of the possible distribution of candidates for training within the hospital organogram (marked in yellow), though other combinations are possible. Once the hospital has been selected, the proposed participants are invited to nominate for the selection process. Proposed participants should meet the following criteria to be eligible

- Have at least two years of working experience
- Age below 50 years
- Completed diploma or undergraduate level of education.
- Have managerial positions at the middle level or work as professional staff (medical doctor, nurse, midwife or allied health professionals)

Meeting the above requirements, the candidates then take the selection tests, consisting of both a written examination and a panel interview. The written examination covers not only aspects related to knowledge concerning local health policy and hospital management, but also tests their ability to work as a team, and ability to identify and solve problems using a case study. The interview is conducted by a panel of four examiners, consisting of representatives from the Provincial Health Office, the international support organization (GTZ) and universities (UGM and UNRAM). The interview explores the participant's motivation, awareness

of health problems and policies set by the Provincial Health Office, and basic understanding of management and hospital managerial problems.

Applying the above selection processes for the hospitals and participant candidates, 3 out of 6 public hospitals and 18 out of 28 candidates were selected as HMT participants for the first batch of training. They were all from Lombok Island, which made the organization of the training easier.

During the first batch, the fact that some staff were not selected had a negative impact on the team work. Staff who were not selected did not feel concerned for the later change processes, and selection created divisions and jealousy within the staff. To deal with this, the selection criteria need to be communicated to the staff and be applied by hospital managers, and the trainer team may decline proposed selections and ask for new considerations to be made, if the team mix is not appropriate. As it may be necessary to include staff with lower qualifications as part of the team, accreditation may need to be reconsidered and may not be possible for all participants.

For the second batch the selection process was changed as hospitals in more remote districts/islands do not have sufficient qualified staff to enable a real choice and the focus was to cover all remaining general public hospitals of NTB province. As a result, there was no competition for selection between hospitals, though they still had to fulfill the same criteria. The hospital directors were given the criteria and they had to provide a list, which was critically analyzed, and if not conforming to the criteria, had to be revised.

Figure 7. District hospital organogram in Dompu and position of training participants
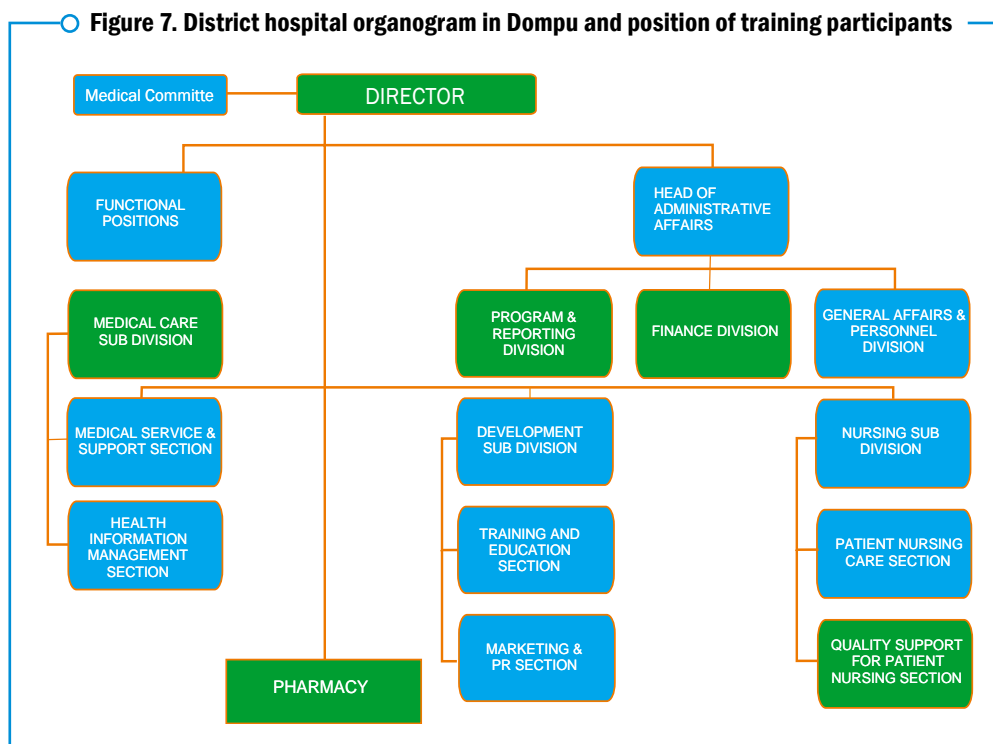
Figure 7 shows an example of participants distribution in the second batch is seen in the Organogram from Dompu district, where the hospital director also participates.

4.3   Training process

Overall, the HMT process is divided into three main components: the four learning blocks, the Quality Improvement (QI) action project and the final course examination. In total, the learning blocks take approximately 6 months, including assignments carried out in their own work settings at the end of each block. To enhance the application of concepts learned into practice, participants organize block presentations to other staff in their own hospitals. The results are then used to select priority problems in hospital management and to identify feasible interventions to be implemented within a 2 month period for the QI action project. Afterwards, the findings are presented in a seminar, inviting key stakeholders from within the hospital, district/provincial health offices, universities and GTZ as the international organization involved. The final activity in the HMT is the final examination of the course.

Figure 8. Overall structure of HMT process

Learning Blocks	QI Action Program	Final Examination
■ Block 1	■ Proposal	■ Written
■ Block 2	■ Implementation	■ Interview
■ Block 3	■ Presentation	
■ Block 4		
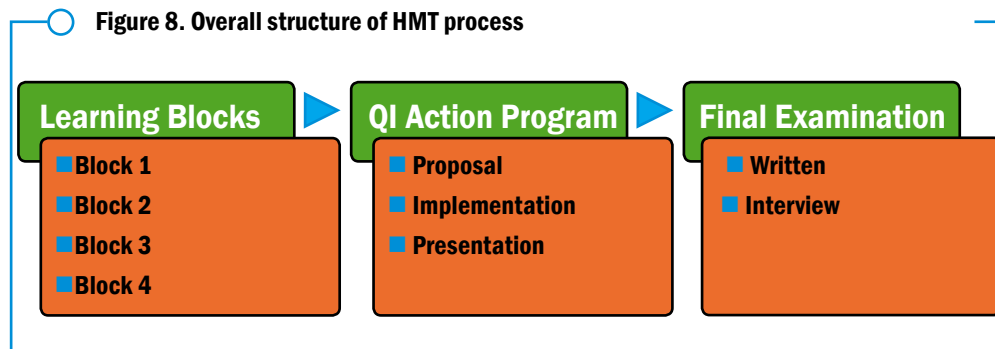
The learning blocks were delivered over two full-days in a week (Friday and Saturday). In this approach, training is not conducted in isolation from their current duties. Participants have the ability to perform their normal duty and concurrently, concepts delivered during HMT can be related directly to actual situations in the hospital. Since participants come from the same island, within reasonable distance of the training, this design is easier to apply. For other situations, where participants are from different islands, regions or provinces, different strategies should be applied.

For the second training course, which was held in Sumbawa Island and distances between the hospitals were quite significant, the learning blocks were delivered over a one-week duration, twice a month throughout the training period. Each presentation of assignments after each block moved to a different hospital, as it was not possible to go to all of them every time. There was also a longer introduction especially focusing on problem analysis, which was felt necessary after the first training course experience.

The method used in this training is a participatory and active learning approach. Within each block, the learning process is designed as shown in figure 9.

Figure 9. The HMT learning process in a given block

Trainees bring in problems and existing understanding

Trainees work as a team

Reflection on the learning

In-class activity: Lecture, group work, role play, discussion

Field work in own hospitals

Hospital prestentation and feedback

Lectures share concepts and their application

Tutorials to discuss fractical problems in the field and assist preparation for presentation

Reflection on concept application

Within each learning block, the process starts with giving an overview of the module and its learning objectives, delivered by the block coordinators. Lecturers are encouraged to give ample illustrations of real situations or pose a trigger problem relevant to the topics to be delivered. In this way, the learning is contextual and participants are motivated to take an active role in the learning process. Afterwards, experiences and thoughts expressed by the participants are linked to theoretical concepts. A typical session of 1.5 hours duration is divided into 5-10 minutes of introduction, 30-45 minutes of lecture and the remaining time available is used for discussion, practical-group exercises, role-play and a brief summary at the end of session. Each block has developed its own learning strategies in order to bring the concepts closer to the reality.

4.4   Coaching and Peer-Review

During homework assignments after each block, trainers assist in the homework and provide supplementary inputs in order to translate the theory into practice, and to clarify theoretical aspects which may not have been completely assimilated during the training sessions. The coaching is done on a regular base through the local university. Ideally, coaching should be done at the work place of the respective hospital teams and not in a class room, with agreed upon time schedules. Each team should have their own coach, to be assigned in the beginning of the training. During the first training course, the principles of coaching were not well understood,

and these concepts were not strictly followed. For the second training batch this has been changed. Coaches were appointed for each hospital and they participated in all training sessions. UGM was involved to ensure the quality of the coaching process. Participants present their results in front of their peers and the higher management colleagues from other hospitals. The valuable comments given and important questions asked for clarification provide important opportunities for feed-back and further learning. This creates an atmosphere of additional competition and encourages each hospital team to improve their work for each presentation.

4.5   Quality Improvement action project

"Think big, start small, act now". The QI action project is dedicated to improving current services and management practices in the hospital, demonstrating the direct benefit of HMT to the hospitals. The objectives of QI action project are three-fold:

1. To apply concepts learnt in HMT learning blocks 1-4 to diagnose priority problems and develop quality improvement action plan;
2. To implement and evaluate quality improvement actions; and
3. To share reflections on learning and the application of concepts.

In selecting priority problems, participants are encouraged to make use of information presented at the end of each block (hospital presentations) and to refer to priority problems in NTB province. In addition, the following considerations can be taken into account when selecting the priority problem:

■ Impact on reduction of maternal and neonatal mortality ratio (focusing on death occurring in the hospital)
■ Preparation toward reaching BLU status and hospital accreditation
■ Findings from training need assessment in RAP-HoMe
■ Main concepts referred on the curriculum concept (European Foundation for Quality Management, chain of improvement), and last but not least
■ Hospital commitment and current planned activities

The QI action project can be used as an opportunity for the HMT team to strengthen existing interventions already underway in each hospital, to initiate new changes or to modify existing practices. Referring to Berwick's (2001) chain of improvement model, the intervention can be

targeted at different levels within the hospital, from the patient, services or unit, organization up to environment level. The learning blocks in HMT are linked to this chain, i.e. block 1 for the patient level, block 2 for the service/unit level and block 3-4 for organizational level. Action to increase patient awareness or participation in safety issues illustrates intervention at the patient level. Efforts to decrease health-care associated infections in the delivery room and to improve safety at the emergency unit are an illustration of interventions carried out at a service/unit level. Examples of organizational interventions include setting up of patient safety systems, modification of current hospital billing systems, strengthening the quality management system etc.

It is suggested that QI activities implemented as part of the HMT should focus on an issue whose results are achievable within the time frame of the training. The team can focus on a bigger issue but work on achievable activities /preparatory/first set of activities that will lead to the resolution of the bigger issue.

The preparation for the QI action project proposal should involve the director and other leading staff from the hospital. The process could start during the first block and be further developed throughout the course. It is important to identify the core problem and analyze carefully the causes based on data and information gained, to apply what was learned during the course and then agree on one sub-problem. The problem should be examined to determine what quantitative indicators are possible for the measurement of change. This initial situation provides a baseline from which an improvement can be proposed and a strategic approach developed. Series of simple activities are then outlined to achieve the planned objective. Participants need to describe their hypothesis for change, explaining how these activities will bring about an improvement in the situation. The steps need to be clearly stated and the risks identified and strategies to minimize risks should be discussed. The QI action project should rely on available manpower and other resources, with a focus on small 'achievable' improvements within the more complex picture. In this situation, risks should not play a major role. A small grant has been part of the training implementation; nevertheless it is important that the concrete action plan is part of a broader picture and vision and can be used as a starting point for continuous improvement.

5.   Training Evaluation

The training evaluation has different facets to consider, each of them looking at quality output, relevance, applicability, and improvement, thus applying the principles of quality in its whole form:

- Training Process
- Feed-back to trainers
- Learning effect on participants
- Translation of theory into practice
- Ongoing accompanying monitoring and translation into improvement
- Participants assessment during course and final examine
- Impact on organizational change and improvement

5.1   Course evaluation

The training evaluation model from Kirkpatrick (1998) was used for evaluating this course. Donald Kirkpatrick's evaluation model, first published in 1959, has maintained its value, as it does not only look at newly achieved knowledge and skills, but goes far beyond this to include other aspects, focusing in particular on the impact of training in achieving quality improvement, but also on participants' perceptions of the training quality and process.

Figure 10. Kirkpatrick four level of training evaluation (1998)
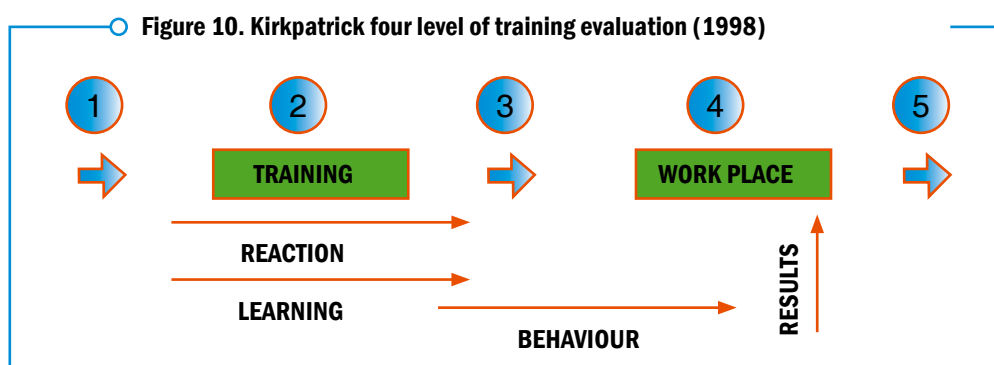
Systematic evaluation of organizational change is not usually part of the assessment of training, and funders of training courses rarely provide a budget for later post hoc evaluation of improvement of services or organizations. Especially in a decentralized environment, where the health sector has to compete with other sectors in budget allocation it is important

to show local governments that investing in training can demonstrate evidence of improved public services and have an impact on patients.

In this training, four levels of training evaluation are applied. At the first level, the reactions of training participants to the session and learning blocks are documented through a simple check-list for each session of a given learning block. The check-list can be filled in at the end of session or at the end of the day. The second level (learning) is assessed through the comparison of questionnaires before and after each learning block. A pre and post test with multiple-choice question is developed for each learning block and the results are presented in terms of achievement of individual scores and average team scores. These first two levels are carried out during implementation of the learning blocks.

Questionnaire for participants' reactions to the session are filled in after each block to give feed-back to the trainers.

Table 1. Participation Reactions Form

PARTICIPANT REACTIONS TO THE SESSIONS

Block: _____

Topics of the session:

Session facilitator   :

1. How relevant is this topic for you?

    a. Not relevant   b. Partly relevant   c. Highly relevant

2. Balance between lecture and discussion:

    a. Lecture dominates   b. Good balance   c.Discussion dominates

3. What do you think about the facilitator:

	Very good	Good	Neutral	Weak	Very weak
In describing the session objective					
In keeping the session attractive					
In communi-cation					
In using audiovisual					

4. Overall, what do you think about the facilitator?

    a. Excellent   b. Very good   c. Good   d. Adequate   e. Poor

5. Suggestions:

_____

_____

_____

_____

_____

_____

_____

Level three and four (i.e. behavioral changes and result) are evaluated during the phase of implementing the QI action project. Behavioral changes are documented by asking the participants as well as their hospital management colleagues and supervisors. A survey of a total 41 respondents from three participating hospitals was carried out to identify different perceptions among stakeholders of HMT in West Nusa Tenggara province and to trigger further discussions for the lessons learnt workshop. The respondents comprised HMT participants and hospital managers. In addition, trainers from UNRAM were also included in the interview. In this survey, changes or progress in relation to initiatives concerning patient safety, overall hospital management, human resource management, marketing and strategic planning were identified. Additional questions on the benefit of HMT to the hospital and training processes were also included and suggestions for improving HMT were sought. This survey was repeated later linked to the impact assessment (Rap-Home 2). The following results illustrate some of the findings from the first survey:

Figure 11. Behaviour change of the participants as perceived by hospital managers in West Nusa Tenggara province (n 38)

Q7. Do you sense any changing in behavior in HMT participants?
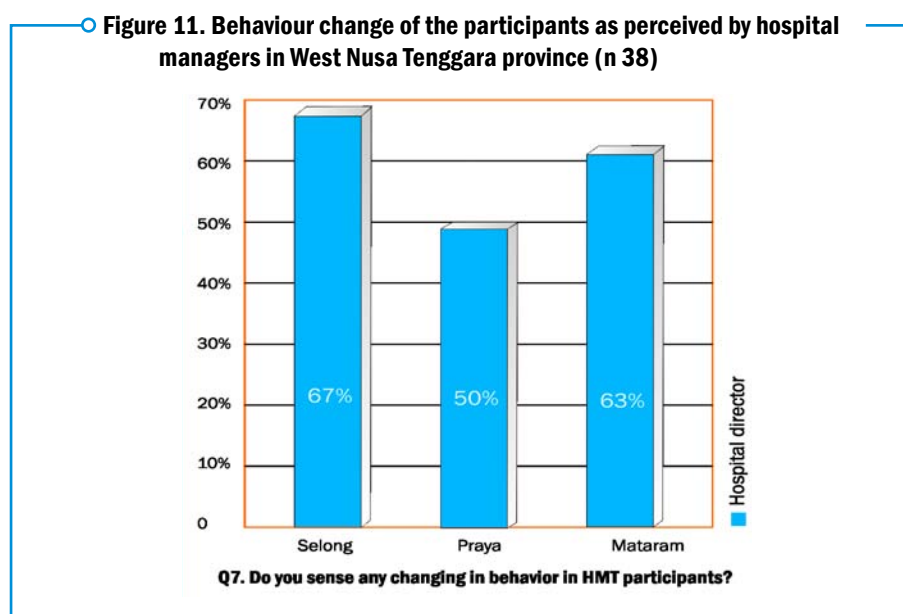
In addition to quantitative information, qualitative expressions were also explored. For example, in one hospital with the lowest perception of managers toward behavioral changes of the participants, the reasons given were inability to judge the behavioral changes in few months after the learning blocks were completed. In contrast, those who perceived immediate changes stated "in advocating patient safety and during the

revision of our strategic plan, HMT participants had lots of new ideas and inputs for the hospital. The team revised the strategic plan and it was approved by the local government".

Some comments from a course participant taken from the film and linked to the problem as stated by the woman (page 9) nicely show the direct impact of the training on change:

○ **Box 4: Changes initiated by HMT team in the emergency ward**

"We definitely feel the benefits of our information received by the HMT team in our hospital. In the emergency ward we have followed-up the recommendations and now things are running well. Before, the pharmacy for the emergency ward was too far away and the procedures for getting the drugs etc. were too long. Starting from the 1st of July we supplied the Emergency Ward with its own stock of drugs and materials. By doing so patients will not have to go all the way to the pharmacy to get the drugs and come back here again"

Finally, the result of the training (level 4 evaluation) is captured by assessing the process and outcome of the QI action plan. These reflect the actual changes made in the hospital as a result of comprehensive mastering of hospital management content as well as managerial skills involved in a change process.

Unfortunately the QI action project had not shown immediate convincing results during the team presentation after two months, but gave a good understanding on the process and the initiative. But this was not felt as a problem, as the process went on and a follow up WS could correct this problem later.

5.2   Participants' assessment

The overall course assessment is designed to reflect the balance between individual and team performance. Individual performance consists of knowledge gained from the learning blocks, as shown by the pre-post test results and the final examination at the end of HMT, while team performance is composed of hospital presentations at the end of all blocks and quality improvement action project process and achievements. The overall assessment was planned to have four parts as follows:

- 20%　:　Improved knowledge from pre and post tests in all blocks
- 20%　:　Final examination, consisting of written test and panel interview in equal proportion
- 30%　:　Hospital presentation at the end of all learning blocks
- 30%　:　Quality improvement action project

In reality, hospital presentations in each learning block were not calculated as part of the overall participants' performance assessment. Instead, those presentations are used as opportunities to give feedback on the presentation skills itself and to highlight key concepts delivered during the learning block. Therefore, the 30% initial proportion for hospital presentations at the end of learning blocks is redistributed to the other three components with equal weight.

The final examination takes two-days, one day each for the written test and panel interview. The written tests consist of 50 multiple-choice type of questions, 10 short-essay questions and one case study. Their proportions were weighted 40% for the multiple choice questions and 60% for essay questions and case study. Questions for the final examination were derived from the modules in the learning blocks as well as quality improvement action project. Overall, the maximum score for the written test was 100.

The panel interview covers four aspects. These are learning and individual action plan, behavioral changes, motivation and commitment, and career development plan. Each aspect was further developed into sub-aspects as the following:

A. Learning and individual action plan
   a. Learning process
   b. Understanding
   c. Individual action plan
B. Behavioral changes
   a. Participant's behavioral changes
   b. Changes in the perception and behavior of hospital staff toward HMT participation
C. Motivation and commitment
   a. Commitment
   b. Motivation

D. Career plans
   a. Changes in their job position/career during HMT
   b. Career plans
   c. Contribution of HMT and opportunities for higher education to their career plans.

For each aspect, 3-4 sample questions were developed (see box 5), from which the panelist was asked to select 1-2 questions. All four aspects were covered during this 30 minute interview. In total, there were 10 sub-aspects and each sub-aspect was scored 5. The scoring was carried out individually by the panelist, before interviewing the next HMT participants. If the individual score between the panelists for a particular sub-aspect exceeds 2, this was discussed and if necessary, the score was adjusted.

○ **Box 5. Examples of interview questions**

Behavioural changes. Aspect 2: changes in perception and behaviour of hospital staff toward HMT participants

a. *Do hospital staff have a different perception toward you during HMT?*
b. *To what extent the hospital Director and staff treat you differently? Are these positive changes?*
c. *Do you feel that the hospital director and staff respect you better after participating in HMT?*

Four groups of panelists are available and each panelist team is composed of the following stakeholders:

■ Representatives of HMT core team members
■ UGM
■ UNRAM
■ GTZ representative

5.3   Cost analysis and economic appraisal of the HMT

Quantifying the value gained through training, in order to do a cost-effectiveness analysis for HMT, is difficult, and little can be found in the literature on cost effectiveness analysis of training. Training is often perceived as an additional benefit for other interventions without a readily quantifiable value. One possibility for analyzing training costs could be to compare two different kinds of training and their respective consequences for patients.

The QI action project is focusing on concrete changes and results, such as reducing nosocomical infection rate often leading to re-surgery, to improve reporting on medical errors and thus being able to reduce them, would allow to link cost to changes and improvements.

Nevertheless, cost analysis of training is important, especially as resources are limited. The issue of sustainability is also significant - training cannot continue to be dependent on international organizations or donors, but must become a financially viable and beneficial option for local stakeholders to maintain. The analysis of cost linked to a defined output in the form of successful participants or something similar is not enough to convince local decision makers to invest in such training. Measurable improvements based on hospital indicators would be more convincing. As many other factors influence the real impact on outcomes such as decreased mortality ratios, it will be difficult to clearly show cost-effectiveness. Here as an initial step we are examining costs per input, linking these to the participant team and calculating costs per individual participant. Further analysis can only be estimated, as there is need for a longer period to assess change or/and improvement or/and impact.

We have analyzed the cost according to the different inputs for the first training course. There were no additional costs for participants such as accommodation, as everybody could go home at night, but participants and trainers were provided with meals and snacks during the training session, and a small amount for transportation was paid (50.000 IDR[1] per day per participant), and is included in the training implementation calculation.

The preparation cost includes the selection process, the workshops and the trainers' and stakeholders' orientation and the official opening ceremony.

The implementation analyzes the cost for each Block and the training material, as well as the travel costs for trainers. It does not count the salary or lost time of the trainers or participants, only direct payments linked to the training.

The QI project includes the preparation the result and the evaluation. The additional costs which may occur in the hospital are not taken into consideration.

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1   10.000 IDR are about 1 US$ at the time of the training

The Monitoring Workshops are the mechanisms planned for ongoing evaluation and analysis.

The course management includes all kinds of logistic costs as well as Human Resources for coordination.

Neither the benchmarking visit nor the involvement of SEAMEO TROPMED network is included in the calculations.

Box 6: Cost analysis of Hospital Management Training

Item	Cost in IDR	Cost in EURO
Preparatory Phase	141,295,000	€10,869
Implementation Block 1-4	378,605,000	€29,123
QI action project	200,500,000	€15,423
Monitoring Workshops	65,405,000	€5,031
Course Management & Coordination	258,930,500	€19,918
Final Examination (estimation)	50,000,000	€3,846
Follow up survey on hospital competence (estimation)	260,000,000	€20,000
Total cost per course:	1,354,735,500	€104,210
Total cost per Hospital team:	451,578,500	€34,737
Cost per Trainee (18)	75,263,083	€5,789
course fee per Trainee enrolled in the Master Degree course in UGM	95,449,000	€7,342

1 EURO=   13,000 IDR

The cost per trainee or per successful trainee is still slightly cheaper than the participation in the Master Degree course. Nevertheless to weight the advantage and disadvantage and possible impact in improvement for patients through one kind of training against another is not possible and would need a complex study.

During a project evaluation early 2009 the following remarks have been made regarding cost-efficiency of HMT[2] :

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2   Project Review report Dr. Susanne Pritze-Aliassime, February 2009

Box 7: Cost for hospital management training course

"Cost-efficiency reflections as compared to scholarships for Master degree have to be considered against the training impact in change and improved patient safety. Tailor-made training courses are relatively expensive compared to Master courses in Hospital Administration. Yet, Master Courses can only be accessed with the required entry level, which many of the actual trainees do not have. Coaching is an important method of teaching, but to institutionalize coaches and linking them to a local university is a too narrow concept. Experience indicates that a more open approach to coaching might be better without putting too many criteria. Actually, alumni from the UGM Master program are considered a possible option and are already involved in the second training cycle in Sumbawa island starting in February 2009."

Nevertheless it is possible also to finance training through the hospital directly. If we look at what the three hospitals being enrolled in the first training had spent for overall hospital expenditure in 2008 and what percentage this would mean regarding the team being trained, it only represents 1-3.5%. That should be affordable if the value and impact on improvement through training could be clearly shown

Figure 12. Expenditure in 2008 for the 3 hospitals participating in the first training batch as analyzed for the District Health Accounts in NTB

■ Pengeluaran per RS

Expenditure trainee team

451,578,500

1.14% - 3.48%

Mataram City	Central Lombok	East Lombok
12,982,392,40	23,519,092,62	39,585,381,82
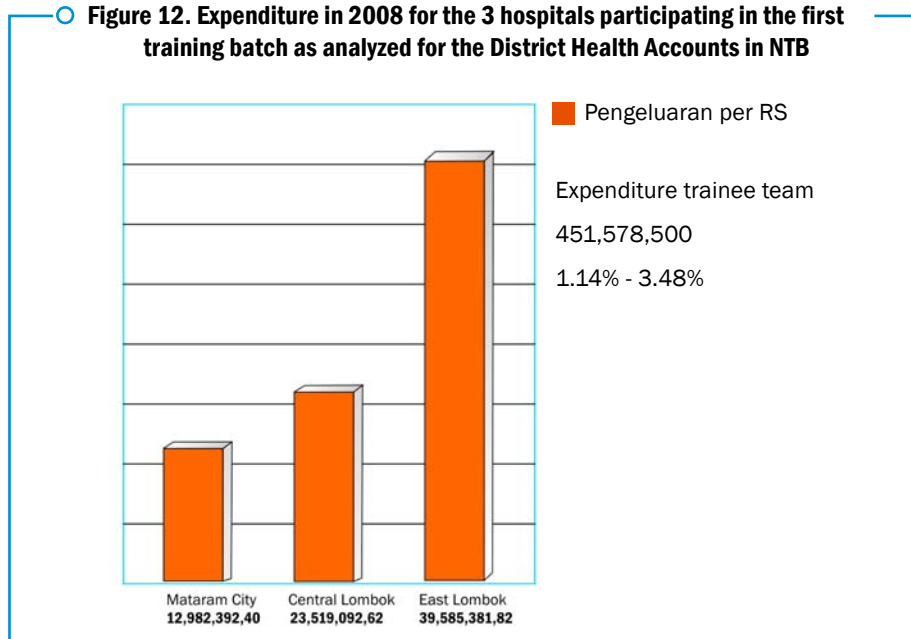
5.4   Accreditation and course certification

Accreditation for the HMT has been given by the Provincial Health Office in NTB province [3] and the Master of Hospital Management program at

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3   As Indonesia is a decentralized country accreditation is given at provincial level and not at central level.

UGM. This accreditation enables the participants to obtain academic credits should they continue to a master's degree (see credit transferable units). Accreditation by the Provincial Health Office requires all training plans for each block to be submitted to the Provincial Health Office before implementation. In addition, the Ministry of Health has been involved as part of the core team and having participated in every important milestone. The overall evaluation is as follows

Table 2. Evaluation Score

Source of Assessment	Component	Score/ Proportion	
Individual			40%
	Block pre-post test	100	
	Final Examination	**100**	
Team			60%
	Block Presentation	150	
	QI action	150	
Total Score		**500**	**100%**

After successful completion of HMT, training certificates are given to the participants in two forms, i.e. certificate of attendance and course certificate. Certificate of attendance is given provided that participants complete at least 75% of all training activities, regardless of the achievement. While the course certificate is awarded under the conditions that 60% of individual score is achieved and 75% of team score is achieved.

5.5 Credit transferable units

For each learning block, we have compared the existing curriculum in the Master of Hospital Management program at UGM with the content of the HMT. Credit transferable units are calculated, taking into consideration the topics covered, number of sessions, in-class and field assignments, and overall study load. Overall, credit units gained from HMT is equivalent to 16 credits transferable to the master program with the total 35 credits, excluding thesis writing. This will be applied as the basis for describing further learning activities to be completed in the master program and can be used until the latest two years after completion of HMT.

5.6   Scholarship award

The GTZ scholarship award is granted for the 2 best participants based on their performance in the course evaluation. It is only available for the first training batch as payment is linked to the duration of the projects. The award covers full payment of tuition fees, modules, research allowance, and living allowance up to graduation ceremony for a maximum of two years. Beyond this period, participants are responsible for their own cost. Participants will participate in the intensive track or distance learning track in the hospital management postgraduate program.

UGM in addition gave also 2 awards to the next best participants exempting payment for course fees for them.

6.   Impact assessment six months after training completion

Efforts to evaluate the training course and its impact on hospital services have been planned since the preparatory of HMT as it is felt as a very important part to show changes and hopefully improvement.

The second survey was a comprehensive and systematic assessment of hospitals' input, process and outcome. To see changes the findings from RAP-HoMe surveys before and after HMT were done in order to analyze the impact of HMT batch 1 in 3 hospitals in Lombok Island.

The Conceptual Framework, as designed by UGM, is based on the logic of identifying needs, implementing tailor made training as action and assessing changes and impact. In the case of little positive or even negative changes, causes need to be analyzed especially linked to possible negative environmental changes, which may have intervened since 2006. It will be crucial to see if the former participants' team is able to enhance a prioritized process of action to overcome problems and if the hospital directors are committed and able to make the improvement process work

Figure 13. Conceptual framework in Hospital Management Training evaluation
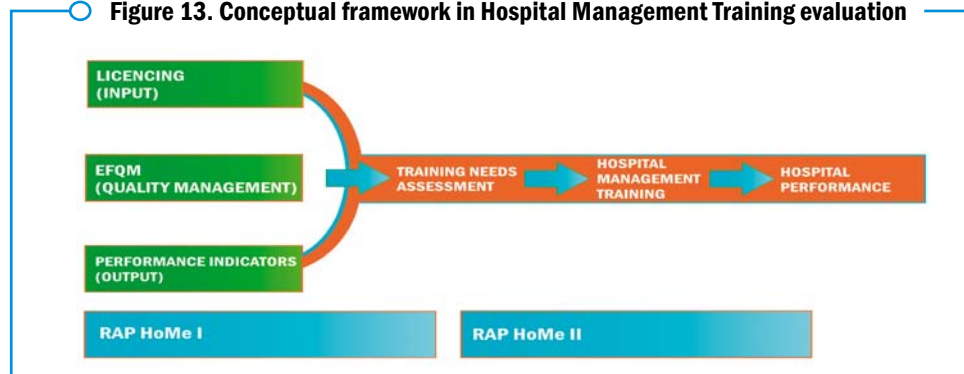
The initial RAP-HoMe was looking at aspects of hospital management from different perspectives, utilizing the existing Ministry of Health hospital licensing requirements and hospital performance indicators, EFQM self-assessment and felt-need training assessment. The tools capture different perspectives of hospital stakeholders, i.e. District/Provincial health office/Ministry of Health (through the licensing requirements), patient perspectives (as part of the performance indicators), health professional perspectives (as part of the performance indicators) and the hospital managers' perspectives. The RAP-HoMe survey before and after HMT follow the same protocol to enable comparisons, but with modifications and additional aspects covered in the second survey.

For illustration, in the first survey patient satisfaction was only measured in inpatient services. In the second survey, patient satisfaction was measured in several units (such as emergency, inpatient, outpatient, lab, pharmacy) in accordance to the minimum service standard (or Standar Pelayanan Minimal-SPM Rumah Sakit) launched by MoH. The second survey also incorporates patient experiences in selected units relevant to the QI project (such as emergency unit in NTB province hospital, surgery ward in Praya hospital and obstetric ward in Selong hospital). An assessment of behavioral changes similar to the one undertaken after the QI project was also repeated in the second survey with some modifications. Another example of additional aspects covered in the second survey was related to SPM indicators, which consist of 96 indicators to measure 21 hospital services. Although it is impossible to cover all indicators, the second RAP-HoMe survey added 24 indicators to measure 15 services in the tools.

Table 3. RAP-HoMe I and II

Aspects	First RAP-HoMe survey (2006)	Second RAP-HoMe survey (2009)
Regulation	Hospital licensing standard	Hospital licensing standard
Quality management	EFQM self-assessment	EFQM self-assessment
Hospital performance	MOH hospital performance indicators	MOH minimum service standard (which includes the previous hospital performance indicators)
Training assessment	Felt-need training assessment	Not carried out
Additional small-scale study	Conducted, but after QI	Included with additional questions

The following list shows part of the Minimum Service Standards for hospitals in Indonesia as defined by the Ministry of health that are included in the impact assessment:

Table 4. Hospital Minimum Service Standard indicators included in the RAP-HoMe survey

No	Service	Indicator	STANDARD
1	Emergency Room	Response time	5'
		Staff competency	100%
2	Outpatient	Service type	4 basic specialist
		Patient satisfaction	80%
3	Inpatient	Service type	4 basic specialist
		Patient satisfaction	80%
4	Obstetrics and Gynecology	Availability of CEONC team	Available
		Maternal mortality due to sepsis	Max 1.5%
		Maternal mortality due to eclampsia	Max 2%
5	Surgery	Waiting time for elective surgery	Max 2 days
6	Intensive Care	Staff competency	100%
7	Pharmacy	Waiting time	Max 30'
		Patient satisfaction	Min 80%
8	Laboratory	Timely calibration	100%
		Patient satisfaction	Min 80%
9	Radiology	Expertise staff for radiology	100%
		Patient satisfaction	Min 80%
10	Nutrition	Timely meal distribution	Min 90%
11	Logistics & Maintenance	Timely equipment maintenance	100%
12	Medical Record	Medical record completeness	OP 100% IP 100%

Table 4. Hospital Minimum Service Standard indicators included in the RAP-HoMe survey - continued

No	Service	Indicator	STANDARD
13	Waste Management	Solid waste quality control	BOD Max 75 COD Max 27 TSS Max 30 pH 6 - 9
14	Management	Number of staff training	36 hour
		Staff satisfaction	80%
		Cost recovery	60%

The assessment should include aspects to comment on the Development Assistance Committee (DAC) criteria in relation to the hospital improvement and the role of the HMT training has in that:

- Relevance
- Effectiveness
- Impact
- Efficiency
- Sustainability

Relevance and effectiveness of HMT has been evaluated as part of level 1 and 2 training evaluation. Efficiency was not specifically assessed. However, data on cost and training outcome may be used to illustrate efficiency. Therefore, the focus of the second evaluation is on impact and sustainability.

The result of the impact assessment did not show the hoped improvements in all aspects. These results were discussed with each hospital team separately and external factors and causes for the results are discussed and strategies to improve the situation and to learn from the results are fixed by the teams involving also their hospital directors. This is important to keep the enthusiasm for ongoing improvement alive and to prepare the teams for the stakeholder meeting involving again all participants all trainers and organizations involved, core team members, including MoH, SEAMEO-TROPMED and for the first time two persons from Cambodia: the deputy course leader from the NIPH and one hospital director of Mongkul Borei hospital, Banteay Meanchey Province – Cambodia. Getting representatives from a country having a long standing experience in ongoing QI process was enriching for both countries, and could be a start for longer cooperation.

7. Review of the training course

The HMT conforms to the slogan for quality management: *"Do the right thing right at the right time and do it better tomorrow"*. Ongoing feed-back and monitoring is important to permanently improve the process in order to establish a culture of quality improvement towards quality assurance.

7.1 Ongoing monitoring

Each training session and learning blocks were evaluated and participants' comments were translated into action for change. Course modules were also adapted during the course in order to accommodate the learning process.

Before the QI action project started a first review was carried out in order to have a sense of the overall training process, knowing that it was too early to make substantial comments. But by doing so, there was still the possibility for correction and improvements. A small survey of the participants and the top management of the hospital was initiated with the objective of finding out the different perceptions among stakeholders of HMT in NTB and in order to trigger discussion for a lessons learnt workshop. The perceptions of the top manager and the participants were different on the extent of change and also on the perceived usefulness of the training. The results were then commented on by trainers.

This survey was then repeated 6 months after completion of the training.

Figure 14. Comparison of perception of hospital managers and participants in 2008 and 2009, regarding patient orientation

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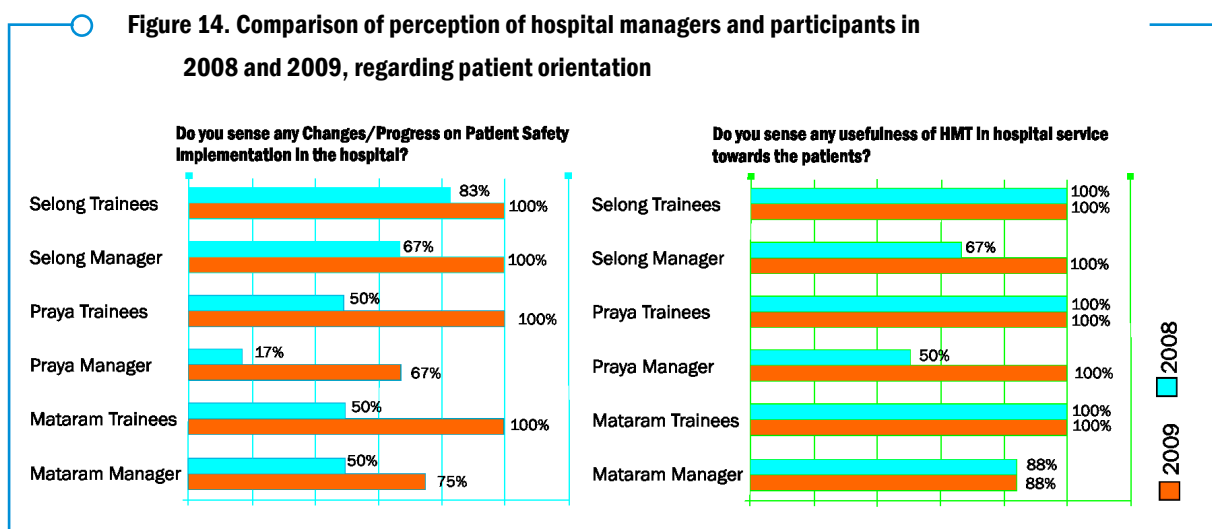
The findings were an important input in a first review workshop involving participants, trainers and the hospital directors, GTZ staff and consultants and the core team and representatives from SEAMEO TROPMED Bangkok. The second survey and the evolution on judgment was then an important input on the overall review and impact assessment workshop in July 2009.

Figure 15. Comparison of perception of hospital managers and participants on changes after implementation of QI action project and HMT team empowerment in 2009

Do you sense any Changes after the Implementation of QI?

- Selong Trainees: 100%
- Selong Manager: 67%
- Praya Trainees: 100%
- Praya Manager: 83%
- Mataram Trainees: 100%
- Mataram Manager: 88%

Do you sense that the hospital empowered the HMT?

- Selong Trainees: 67%
- Selong Manager: 67%
- Praya Trainees: 67%
- Praya Manager: 67%
- Mataram Trainees: 60%
- Mataram Manager: 25%
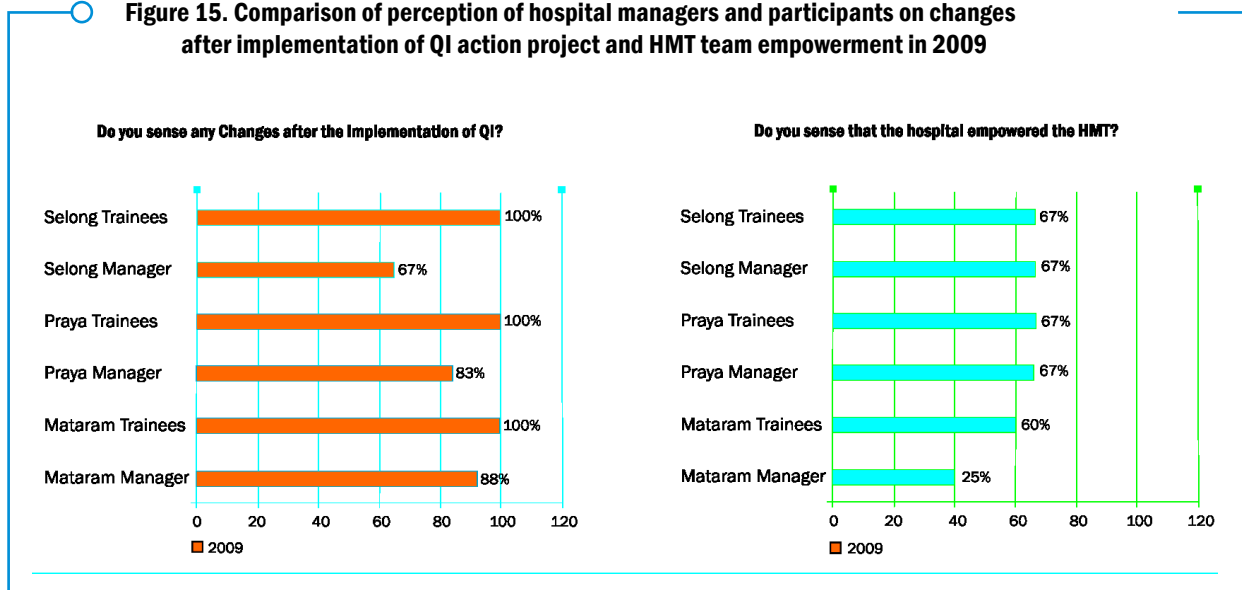
7.2   Lessons learned

The approach of HMT was felt to be innovative, with a higher potential to achieve change for the betterment of the patients and the hospital than other training. The team approach can give greater synergies and makes problem solving easier. The process triggered open discussion on medical errors and how to reduce them, or even to avoid them. This has never been done in the past and can hopefully be maintained beyond the training. Many initiatives that had started before the HMT contributed to the positive change, but it now became more focused. The involvement of other hospital staff and the top management is considered a particular asset. This can lead to a cascade effect so that the training impact can extend far beyond the participant team. Peer-review directly increases efforts by participants as nobody want to feel weak in front of their peers. Advocacy has resulted in benefits for staff stability, as the planned rotation of one staff member was withdrawn, and one of the participants was promoted to vice-director.

There have been improvements in gender equity, as women represented 44.4% of the participants in the first batch and 38% in the second batch.

The fact that for the first batch all participants came from the same Island (Lombok Island) made it easier to organize the training, as the most distant hospital was only about 1.5 hours drive away. This was changed for the second training batch where participants are from islands where driving distances may take up to 6 hours or air travel. It will be even more difficult if participants come from several Islands. This will influence the way the training is organized: only 2 days per week during Friday and Saturday will not be possible anymore. Sessions have to be regrouped in one week, which means also a longer absence from the workplace. This must be negotiated with the hospital director as it may also be a problem to have 6-8 persons absent at the same time and it may be needed to split them in 2 groups of 3/3 or if more of 4/4. To keep the team together there are common events as the starting and team building and the assignments in the hospital, which should be backstopped from the local trainers. The workload for the trainers may increase, not so much altogether (if not a parallel course has to be run), but occupy a more compact time schedule. This may increase the cost also.

Ongoing monitoring has been felt as a very important tool for ongoing improvement of the training conduction, to keep the stakeholders informed, to make the hospital teams critically question their impact and change process and to keep the ongoing quality improvement process alive. Learning from other countries and exchange of experiences and challenges encountered is another important way to start the process and culture of patient orientation and QI.

7.3 The way forward

Stakeholders involved in this HMT process have identified both strengths and weaknesses. The positive aspects of the HMT include: the training curriculum and process, incorporating trigger materials and case studies; the team approach as a way of solving hospital problems; the broader impact of HMT to the hospital organization beyond the trainees; peer-review mechanisms creating positive competition in trainees performance; and recent knowledge in global health care system incorporated in the training materials (such as patient safety).

Despite the positive features, challenges remain. These include: the course load; the need for completed training materials prior to the learning blocks; keeping the same level of enthusiasm throughout 11 months of training; effective mechanisms to engage more decision makers in hospital presentations; the need for a stronger structure for mentoring during assignment; and the need for the QI action project to link and reinforce messages delivered during the course; the delicate balance between personal and organizational benefit to be gained from participation in HMT; and the overall design for continuation to a master's degree at UGM. The training courses and the QI action project were not well integrated from the beginning of the first course. This led to insufficient depth of problem analysis in the QI action project, and less utilization of assignments in the previous learning blocks to contribute to the QI action project. To make full advantage of the learning blocks, it is recommended that the problem for the QI action project is defined from the beginning of the training. Problems can then be fine-tuned and analyzed during the learning blocks. Similarly, potential interventions may also be identified early. Preparation of the QI action program is focused on the detailed preparation and implementation of the selected intervention.

The following recommendations identify aspects to be considered for improving future implementation and were used for the second batch. This may also be useful for others in order to see problems encountered and the proposed solutions.

a)   Continuing advocacy

Before training, a benchmarking visit and signed letter of commitment was carried out as part of advocacy with the local government. The advocacy needs to be reinforced during and after training activities, through sending the list of HMT participants who have succeeded in the training, keeping the local government informed of the key training process, and preventing changes in the position of hospital director. Similarly, the commitment of hospital directors to promote and empower the team will sustain further efforts to continuously improve the services. It is equally important to keep the central level, MoH informed and involved along the way. They are the ones able to further spread the HMT course concept and give recommendations that other provinces can adapt and use it for their hospitals.

b)   Selecting individuals with higher capacity

Despite the advantages of the team approach and the appropriate mix of individuals in the team, the effect of HMT may be greater where a team with higher capacity in the organization is selected.

c)   Better alignment of human resources

With the intention for the training to impact on the organization, this HMT applies complex learning activities which occur for a period of nearly one year. Human resources from different organizations are engaged in HMT and they play different roles during HMT. Resources from a partner local university are mobilized for transfer of knowledge and skills. The provincial health office, as well as hospital managers, are invited to enrich the relevance to the local policy and practical problems faced. Hospital directors of the participating hospitals are also involved to facilitate sharing and communications to other hospital staff and to support the HMT team while introducing changes. Their roles also vary across the training period, acting as trainers, facilitators of discussion, tutors in tutorial sessions for discussing field assignments, supervisors and mentors during the QI action. To give a synergy in the learning process, these human resources need to be better prepared and aligned to optimize their capacity and roles.

d)   Preparing the participants better

Prior to the learning blocks, the HMT team can be better prepared by incorporating sessions on problem analysis, how to search and use literature and how to read effectively. Distribution of training materials beforehand will also increase the preparedness of HMT participants.

e)   Building QI action from the start and mentoring system

Problem identification for the QI action should be discussed early enough to enable proper justification and analysis as well as to take advantage of the learning and assignments from previous learning blocks. During the implementation of QI action, mechanisms for close supervision and mentoring are necessary to ensure timely and effective implementation of the changes. Resources from institutions such as Health Training Centre and GTZ project staff can be attached in this activity.

f)   Encouraging proactive behavior of trainees

This type of training is demanding for the participants as they are expected not only to master the content, but also to share and communicate their learning to involve more hospital staff and to initiate changes throughout training period. This increases the course load considerably. Therefore, problems faced at any training stage need to be immediately discussed with peers, superiors or training facilitators. Keeping open dialogue with trainers, peers, hospital directors and others is important to maintain their spirit, motivation and commitment as a change agent for the organization.

g) Possibilities for other countries to use a similar approach

The wide dissemination of the present HMT course book through the SEAMEO TROPMED network may draw interest from other countries to use a similar approach as was considered during the SEAMEO TROPMED board meeting in 2008 and 2009 by Laos and Vietnam. The Indonesian and Cambodia experiences could be used as an entry point.

As expressed by Dr. Sandra Tempongko from SEAMEO TROPMED network during the final HMT impact evaluation workshop held in July 2009, the overall evaluation of the training content and methodology has been very positive. The course is very much appreciated by the participants and is perceived to have further enabled them to improve their performance in the hospital. The triangulated approach, detailed planning and monitoring as well as immediate utilization of the feedback gathered from different evaluation methodologies have been the strengths of the course. In addition, the opportunity for the HMT team to make concrete quality improvement actions that is integrated in the training model is highly valued to demonstrate how improvements can be done. Internalization of quality improvement and patient safety culture, hence, is strengthened with the team and hopefully be sustained in the entire hospital level.

Implementation of HMT and QI action are not free from problems. These problems are also described and need to be best approched as challenges and lessons learnt. Having the triangulation model and strong involvement of all relevant stakeholders in identifying measures, problems are analyzed and recommendations for quality improvement of training implementation are already put in practice for the next batch of HMT.

Sustainability of HMT results and team empowerment depends upon many factors - most directly, the commitment of the hospital director, and hence, the hospital. In this regard, the role and level of participation of the hospital director in the HMT training is critical. It would be an ideal situation if the hospital director can be a member of the HMT team. However, in some instances this is not possible. Therefore, alternative ways to involve the hospital director aside from direct participation should be explored, such as to arrange a short orientation seminar focusing on patient safety and quality improvement. In the second batch of HMT, open invitation to the hospital directors are sent.

Applicability of this course can be expanded to other provinces in Indonesia and to other countries in the region. The Cambodian and Indonesian experiences of HMT can together be models to be shared to other countries. Lessons learnt drawn from these two experiences and identification of potential areas to adapt this training should take into account the context of hospital development and setting of these provinces and countries in which HMT was initiated. Where access to university masters programs or training in hospital management is limited due to geographical remoteness or unavailability of training programs, limited human resources available with high needs to improve their capacity in managing the hospitals, coupled with serious health burdens in the community such as in NTB province, this training model can be most effective and efficient.

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Chapter Two

Building from the past: Background information on hospitals in Indonesia

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Overview of chapter:

The hospital industry in Indonesia has been growing for hundreds of years. Development today should be linked to the initial phase of hospital services, established in the Dutch Colonial era. We can still identify the tier system in hospital services, which has persisted since that period. The first hospital that served the community was providing two classes of services, for the military and Dutch officers and for local high-class people. Today hospitals provide more classes of service to serve different kind of social need. The governance of today's hospital is also influenced by the governance style of the past. The medical doctor from Holland usually acted as a director, as well as the medical doctor in the hospital. In the modern era of the hospital industry, we can find similar phenomenon in certain types of hospital. Medical doctors can still be the owner, the manager, and the service operator at the same time. Therefore it is very relevant to review the historical background of hospital development to understand the current situation of Indonesia's hospital industry.

The health system in Indonesia has changed into a decentralized system since 1999. This has implications for the regulatory aspects of hospital management, particularly the mid-class hospitals operated at the province and district level, with the main roles and responsibilities of central government now shifted to local government, in terms of licensing procedures and supervision.

At the micro-level, the management of hospital organizations, particularly public hospitals, is experiencing a transition towards more independent

agency. This is providing wider autonomy, mainly in the financial aspects, and greater responsibility to manage resources in order to improve the quality of care. Public hospital managers have been waiting for this format of management for more than 5 years. In the year 2009, the Hospital Act has been enacted to strengthen the hospital management and to protect the patients' interest within the health care system.

Content

1. The Hospital and the Health Care Industry

The health care industry has been going through some radical changes in recent years. Like most other service industries, the current hospital industry is very capital intensive, technology intensive, and labor intensive. Therefore, there has been a growing interest to apply the most-recent management concepts to management of hospitals.

The hospital is part of the District Health System (DHS), and continues to play an essential role in order to achieve optimum health for the population. In Indonesia, the hospital service utilization pattern for the last 10 years confirms the role of the hospital as an important source of care. The performance of hospitals, though, has been challenged by globalization, decentralization of government services and specifically by recent health care system and organizational reforms. The global patient safety initiative is integral to many of these reforms.

Hospitals in Indonesia have a long history and are very dynamic. A number of actors have played significant roles in the development of hospitals in the past 100 years. In the past two decades, Indonesia has made substantial progress in improving health care management. The rapid growth of the hospital industry is one of the more observable signs. There have been hundreds of hospitals built since 1990. The private sector has contributed a large part of this growth, in addition to the commitment of local governments to build a new hospital in each district or municipality. The adoption of current technology is a distinctive feature of the more recent hospitals built in Indonesia.

2. Hospital Classification in Indonesia

Hospital in Indonesia has different characteristics in terms of ownership, function, service specifications and capacity to provide range of clinical services as the following:

1. *Ownership*, into private and public hospitals;
2. *Structure*, into general and specialized hospitals;
3. *Financial objectives*, into for-profit and non-profit hospitals;
4. *Function related to educational responsibilities*, into teaching and non-teaching hospitals;
5. *Degree of service specification*, into general and specialized hospitals; and
6. *Capacity to provide range of clinical services*, into level of referral hospitals (secondary and tertiary care) and different hospital class for general hospital (A, B, C and D)

Table 5. Classifications of general hospitals in Indonesia

Public hospital*	Private hospital	No of beds	Clinical services
A	Not applicable	Not specifically stated	Have a broad range of facilities providing specialized and subspecialized clinical services
B	Utama	A minimum of 200 beds	Provide at least eleven (11) specialized clinical service and limited sub-specialized care facilities in the range of clinical services offered; teaching and non-teaching hospital
C	Madya	A minimum of 100 beds	Provide at least four (4) basic specialized clinical services and facilities in the range of clinical services offered
D	Pratama	A minimum of 50 beds	Offer basic medical services and facilities in the range of clinical services offered.

*Specialized hospital is classified into A, B and C class. Source: Ministry of Health (2007)

3. Hospital Services History in Indonesia

The first hospital service available in Indonesia commenced in the 17th century. It was a special effort of the Dutch East India Company (VOC) to provide health care services for their members in the Dutch Colony of Indonesia. This built on earlier medical scientific developments in Asia, led by Dr. Caspar Schamberger, a surgeon in Edo, Japan. He taught a number of Japanese people in medical science, particularly surgery. He paved the way for the transition from traditional healing methods to the western paradigm of medicine. These two factors significantly influenced the development of health care services in Indonesia.

In the 19th century, hospitals in Indonesia were operated by the military. They exclusively provided care for army personnel and their families, as well as the members of VOC. The services were expanded for local government officers and specially-privileged Indonesians who worked in the Dutch offices.

"Dokter Java" came into service in the second part of the 19th century and made several changes in the organization of health services. They provided a down to earth service (perhaps a forerunner of the Primary Health Care concept) with their own standards of quality of care. Indonesians and others excluded from the military hospitals could access "Dokter Java". This progress led to the development of local hospitals to serve the surrounding community. This policy continues to the present day where the government expects that every local government will provide a hospital in every district.

Christian Missionaries also started to provide health care services for Indonesians during the latter half of the 19th century. They had observed a lot of unattended health problems and the impact of exclusive health services in the communities. These Missionaries commenced with a very simple health service to serve local people, with Mission hospitals organized by a number of missionary organizations and developed in cities and in rural areas.

One of the biggest Missionary organizations, called Zending, received regular government subsidies to provide health services for local people, spending the amount of F 218,459.03 to run the service. This was financed by the Dutch Governor (44.5%), Churches, Medical Doctors, and profit from the VIP class in hospitals (19.4%), patient payments (10.7%), donations from the Sultan and Pakualam (8.4%) and donations from plantation companies (5.6%). It is calculated that 70%-80% of the service costs were covered by subsidies (Trisnantoro and Zebua, 2000). The policy of the Dutch Colonial Government to support Christian missions was the first subsidy policy known in Indonesia.

Islamic hospitals were developed later in the 1930's to provide health care services for the members of the Islamic movement and their social organizations, the biggest organizations being Muhammadiyah and Nahdlatul Ulama. The service cost, excluding the patient charge, was

covered mainly by Muslim traders and politicians. This phenomenon has further enriched the model of hospital financing in Indonesia.

Private hospitals were developed by plantation and mining companies. Their main mission was to provide health services for their workers and the executives. A two-tier system was applied to accommodate the service organization, distinguishing care for workers from the higher level of services available to company executives. The dynamics of these hospitals depended on the performance of the principals and was connected directly to the "global market". Where the price of the commodity produced rose higher, and the markets ran well, the subsidy to the hospital also rose, falling when markets fell. This pattern is still evident in some industry linked private hospitals.

In the late 1960's, following the period of political turmoil and economic crisis, the Indonesian government began to rehabilitate the nation's infrastructure. Supported by foreign aid, loans and investments, economic growth was considerably increasing, and by the 1970's, Indonesia was clearly entering a stage of industrial transition. Industrial estates were developed in many locations in the country, resulting in changes in population distribution. By 1994, population distribution was 35.4% urban and 64.6% rural. In 2018 the population is expected to become 60% urban. This will result in increased urban health problems and health needs in the future. Health care demands are also rising and have become more complex as the patterns of disease and needs have changed during this transition.

On the other hand the state budget for health development is rising dramatically, in part from foreign loans or grants, through the commitments of several agencies. The construction of a number of state-owned hospitals has been slow but is progressing. The private hospitals have grown as well during the same period. This sector is supported by the development of investment businesses, which have accumulated domestic capital sufficient for investment in complex healthcare facilities, particularly in Java. The construction of a number of private hospitals has also been financed through offshore loans.

Market demand has been a strong stimulant for building new hospitals, since the growing middle-class are more able and more willing to pay for

better amenities in private hospitals. Hence, the growing interest of foreign capital to invest in hospitals industry in the country.

Technological advances in clinical services, particularly in diagnostic technology, have impacted significantly on hospitals in Indonesia since around 1990. To support these technical developments, management sciences and econometrics are increasingly being applied to hospital management in Indonesia. The emerging awareness of health care managers is resulting in a transformation of hospital management, from traditional management style to more contemporary styles. The adaptation of new paradigms, such as customer satisfaction and quality of care, and the acquisition of forward-looking management concepts (e.g. good corporate governance), have changed the physical appearance of the hospital environment as well as the service organization.

4. Decentralization of Government Services

Decentralization has been a prominent reform policy globally since the 1980s. It has usually been politically driven, and promoted by organizations such as the World Bank, in particular. The decentralization of government services began in the larger South East Asian countries from around 1990. The main arguments promoting decentralization are a) increasing local ownership and accountability, b) improving community participation and focus on local needs, c) improve integration at local levels, d) increase streamlining of services and e) allow innovation and experimentation to suit local needs.

The health sector has had a form of decentralization for a number of years in the form of the District Health System (DHS). In practice, this system continued to rely on central level direction and funding through the Ministry of Health through a hierarchal system of checks and balances. In many countries with DHS, the system consists of all health functions such as public health, health promotion, health centres and hospitals within a specified geographical area. This form of decentralization is better termed "deconcentration" where the shift is from a central level to a peripheral unit but within the same administrative structure (Bossert, 1998).

In many countries under wider decentralization policies, the resultant reorganization has been a split between hospitals and all the other functions of the health system.

5.   Decentralization in Indonesia Health System

With a population that has just passed 210 million, Indonesia has about 100 million (approximately 50%) of the population currently crowded on Java Island. The remaining population is dispersed over the archipelago – a geographic reality that requires some form of decentralization to function effectively. According to Hull (1999), historically there have been various attempts at forms of decentralization, beginning with the Dutch Colonial Government in the early 1900s. Following independence, the Sukarno Government attempted to promote decentralization as a means to foster a democracy, though it encountered political difficulties. The New Order Government of Suharto followed an approach for regional mobilization in Law 5/1974 but this translated into an authoritarian, hierarchical approach leading to calls for greater autonomy for districts. When the Habibie Government was installed, President Habibie signed Law 22/1999 on Regional Government and Law 25/99 on Balancing Finances between the Central and Regional Governments. According to Hull:

> *"The final version of Law 22/99 marks a radical departure from the structures of governance built up over the preceding half century. The two basic levels of governance under Law 22/99 are the central government under the leadership of the President and Cabinet, and the autonomous 'district (local) governments' of Kabupaten (Districts) and Kotamadya (cities). The law implies that the relation between these levels of government involves a division of responsibilities and powers and is not strictly hierarchical. It is the culmination of debate over the preceding decade concerning the appropriate focus for government activity." (Hull, 1999)*

The governmental structure of Indonesia was highly centralized and authoritarian before decentralization took place in late 1990's. Although there were elections and party competition, these formal structures were significantly constrained by legal and informal processes to enforce consensus. The health sector was dominated by the central Ministry of

Health, although other ministries, especially the strong Planning Ministry, Interior and Finance Ministries, and the Family Planning Board (BKKBN) were also taken into account. Territorial governments at the provincial, district, and municipal levels had separate health offices; however, these governments in turn were responsible to the centralized Ministry of Interior. Decentralization processes have transferred significant central control from the Ministries in Jakarta to the province, district and municipal levels.

6.   Hospitals in Indonesia Following Decentralization

After decentralization, the central government gave special authority to local governments to operate regional hospitals through their own funding. Government policy is committed to providing General hospitals (Rumah Sakit Umum) rather than specialized hospitals (heart hospitals, mental hospitals, maternity hospitals, eye hospitals, leprosy hospitals, etc). In 2005 there were 995 of these General Hospitals with 116,286 beds, but only 273 specialized hospitals with 20,480 beds.

Currently, there are 667 public hospitals all over Indonesia, mostly located at the district level. The central government (Ministry of Health) runs the hospital called vertical-hospitals, whilst other hospitals are owned by provincial, district, and municipality governments. The growth of public hospitals has increased by up to 1.25% per year between 1998 and 2008.

Figure 16. The Growth of Public Hospital in Indonesia 1998-2008
(Source: Director General of Medical Services, MoH, (2008)
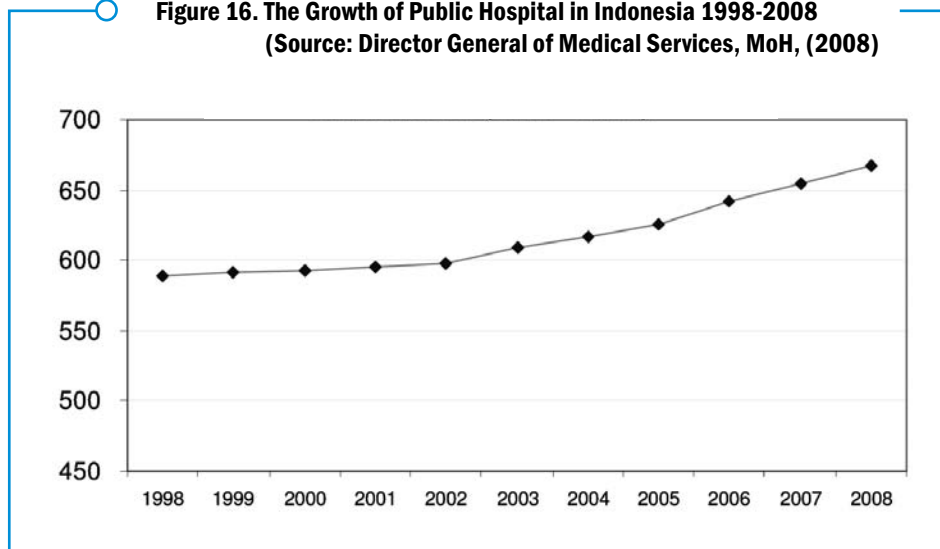
Recently, based on registration data of the Minsitry of Health 2008, there are 653 private hospitals operating in Indonesia. Most of the are located in Java Island and the rest are distributed unevenly in Sumatera, Bali, NTT, NTB, Kalimantan, Sulawesi, and Papua.

Since 1998, the growth of private hospitals has been on average 2.91% per year. There were 491 private hospitals in 1998, and in the year of 2000-2001 the peak average of private hospital growth could be seen at 6.18%.

Figure 17. The Growth of Private Hospitals in Indonesia 1998-2008
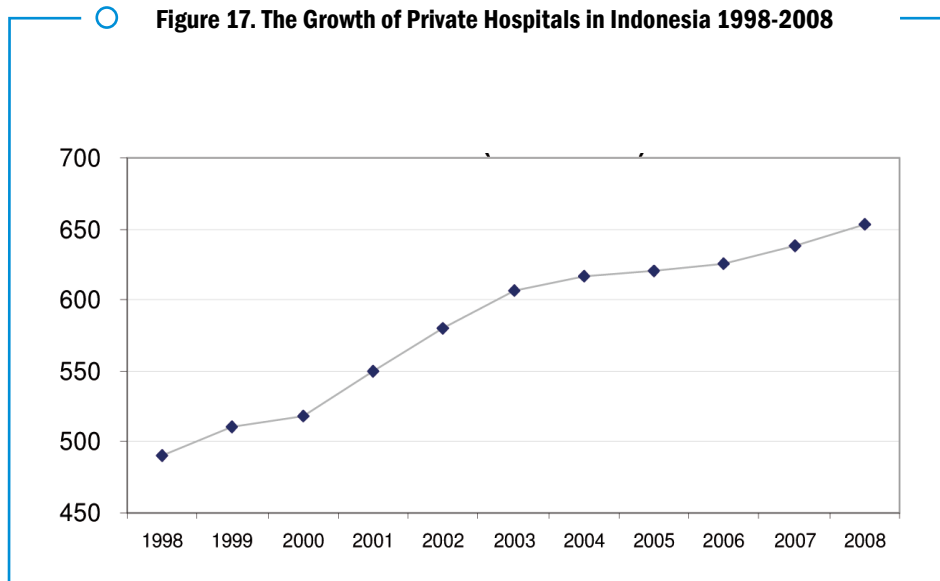
According to the Ministry of Health, the number of private hospitals is growing annually. In 2001 public hospitals increased by 7.9% to 580 hospitals. By 2005, there were 626 hospitals representing an average 2% growth annually. Within the same period, the growth of private general hospitals was 17.3%, rising from 411 to 436 hospitals. A similar pattern was evident for private specialist hospitals, which have grown by 12.4% from 169 to 190 hospitals.

Most of the private hospitals which operate in Indonesia's main cities are profit oriented. Highly ranked private hospitals compete with each other and look towards meeting international standard service quality to maximize their competitive advantage. Examples of these hospitals include: Siloam Gleneagles (Lippo group), Medistra (Astra Group), Metropolitan Medical Centre (MMC), Graha Medika, Honoris, Ongkomulyo Medical Centre (OMC), Mitra Keluarga. The high fees charged for services in private hospitals do not appear to discourage patients from middle income communities from utilizing the services. Aside from the professional services, private hospitals tend to be equipped with various facilities and sophisticated technology, especially diagnostic technology.

7.   The Transition of Hospital Management

Indonesia initiated a program of hospital autonomy (Unit Swadana) in 1991. The program provided an opportunity for hospitals to diversify their revenue sources, including the recovery of some of their costs through user-fees. For all hospitals not certified as Unit Swadana, all of the revenues collected locally are returned to the governmental level which has administrative responsibility for them. Indonesian Unit Swadana hospitals are still government-owned, with a high level of supervision and control by both the Ministry of Health and by local authorities at the provincial and district levels which depend on the centralized Ministry of Interior. Nevertheless, hospital directors are given some control over the portion of their total revenues that come from the fees collected at the facility. Unlike many other countries, the contributions from fees collected by Indonesian hospitals have been significant, ranging from 30% to 80% of total income — the remainder coming from subsidies from national and local governments.

The most recent concepts of public hospital management have been discussed intensively in Indonesia for several years. It was felt that public

hospital management approaches did not provide enough scope to run the evolving organizations, particularly in terms of aspects of financial management. A new format of public hospital management is needed to tackle these issues. The term of Badan Layanan Umum (Independent Agency) has become very popular as a way forward among public hospital managers.

One of the national budget reforms is a shift from traditional budgeting to performance based budgeting. With the performance based budgeting, the intention of the government in using the budget is no longer to emphasize input but rather to become output-oriented. The change is important as a learning process to utilize the limited government resources, but is still able to be applied in the case of increasing budgets from a range of sources (Finance Department, Directorate General of Treasury, 2008).

Output-oriented budgeting is something that has been practiced by many modern governments in various countries. The budget approach is crucial to improving the capacity of working units in the government to deliver more responsive public service. One of the alternatives being considered to improve the public service is by "enterprising" the government. Enterprising the government – moving government working units towards private sector enterprise models - is a paradigm that will give the appropriate direction to public finance sector. The regulation on the budget is found in Law UU No.17/2003 about National Finance (Directorate General of Treasury, 2008a)

Furthermore, Law UU No.1.2004 on the National Treasury opens up a new way of implementing the performance based system in the government area. Article no. 68 and 69 of the law mentioned that government institutions with the main role and function of serving the public can implement a flexible finance management that emphasizes productivity, efficiency and effectiveness (Directorate General of Treasury, 2008b).

As stated in the law UU No.1/2004 on the National Treasury article no. 1, the definition of a BLU (Badan Layanan Umum) is an institution in a government work environment, established to serve the public by providing goods and or services, sold in a non-profit orientation, but doing these activities based on the principles of efficiency and productivity.

The main principles stated in both of these laws have become the basis on which government institutions implement financial managements through the BLU. The BLU is expected to become a stepping stone in public sector financial management reform, leading to improved public service. Hospitals are one of the organizations to utilize BLU status to improve their services.

In UK, the BLU corresponds to Independent Agencies, which are executive board units, separated from the central government, that give services - direct or indirectly - to citizens or businesses or other public sector organization. These Independent Agencies have been given the liberty to manage their own activities, in order to improve efficiency and the quality of service.

Government Decree no. 23/2005 about BLU Finance Management, give the flexibility to develop a healthy business practices to government institutions, excluding the general regulations on national financial management. The BLU finance management is an example of performance based finance management in government institutions.

Accordingly, Government Decree no. 58/2005 about Local Government Finance Management, stating that local government unit that has technical specification in general public service is potential to be managed through as Local BLU (BLUD). Supporting the decree, there was a Ministry of Internal Affairs Regulation no. 61/2007 about technical guidelines on local BLU (BLUD).

With the flexibility given and increased expectations of public service, the appointment of working units that will be BLUD must be selected properly. The Ministry of Internal Affairs Regulation no. 61/2007, article no. 4, stated that working units that can demonstrate eligible substantial, technical and administrative conditions, can propose to the local government head for BLUD. The approval from head of local government shall be done after receiving inputs from a team of assessors. The assessor team has undertaken the role of analyzing and assessing the proposals for BLUD. The results of the assessment are reported to the head of local government as a recommendation.

9.   The Hospital Act 2009

In September 28th 2009, The Government of Republic of Indonesia has enacted the Hospital Act 2009. It has been drafted for more than 5 years and has been discussed on various occasions, including an academic and a practical forum.   The legal issues of hospital management in Indonesia have been growing more complex over the past 15 years, as reflected in the discussion about the need to create a hospital act.

The growth of hospital business in Indonesia has forced the regulator to become more proactive in controlling this service institution. Investment, from local agents up to the global, has been making significant contribution to the emergence of private hospitals. However, the current legal system has not developed sufficiently to facilitate this growing phenomenon. With regard to the governance system, hospitals in Indonesia can still be owned, managed, and operated by the same person. This leads to the duplication of tasks and responsibilities, which is against the paradigm of good corporate-governance. The application of machine medicine in particular hospitals has also not been sufficiently supervised to make it operate efficiently. The obligation of any hospital, in terms of ownership, to provide service for the poor, is written in normative way rather than in a formal law. There are a lot of other aspects that have not been properly regulated by the current legal system. Therefore, the hospital act is needed to handle the situation formally, and to arm the regulator, so that they may become more effective in maintaining the healthcare system in Indonesia. The ultimate goal of the enactment of Hospital Act is to provide better service sand to protect all stakeholders in the hospital industry.

The main issues regulated in the act vary from administrative to clinical dimensions. Its specific objectives are to provide better access for the community, to provide a safe service for the consumer, and to provide a legal organization that works for the workers, to improve the quality of care, and to provide certainty, in terms of the legal aspects, for all stakeholders.

Hospital functions have been defined as a comprehensive health service institution, as a training institution for health workers and other professionals, and to facilitate health research. Ethics and academic norms are the frame within which to conduct those functions.

The role of government as a regulator has been described, and covers multiple aspects of the regulatory function. The government must provide hospitals based on demand, facilitate the financing mechanisms, provide access for care in emergency situations, proper and adequate human resources, and control the distribution of high technology medical devices. In the other hand, government should protect the community by supervising the hospital, should protect the hospital from inadequate charges, and mobilize the private sector to develop hospitals as needed to complement public services.

The ownership structure of the hospital has been defined in a comprehensive, though simple, classification. The act only recognizes private and public hospitals. Public hospitals run by the government and its agency, and the orientation is non-profit. The organization of public hospitals should be an independent agency (Badan Layanan Umum). Private hospitals operated by private institutions could be either for-profit or not-for-profit. The organization of private hospitals can be as a private corporation, which is a for-profit institution, and community hospital, which is a non-profit institution.

In terms of licensing procedures, the hospital should be a formal organization which has a license to build the facilities and to operate the service. The license can be prolonged if the hospital is eligible to meet the current requirements.

The hospital organization has been determined in such way to provide effective organization. The specifications of the managers have also been defined. In terms of governance, the owner of hospital should not be the director at the same time. There must be an oversight body in each hospital and at the national level, the government should form an Indonesia Hospital Oversight Body.

Clinical governance must be applied and comply to general medical standards. Clinical audits and performance audits must be carried out by the hospital. This kind of quality management should be done through an accreditation process at least once per three years. The assessment can be executed by an independent institution and based on particular standard of accreditation.

Hospitals must apply patient safety standards in a comprehensive way. The patient safety movement should be organized formally and the result must be reported to Minister-appointed committee at the national level.

The hospital tariff should be determined by the government, central and local, particularly the third class which is protected by national social security system. The Ministry of Health may draw the policing line of national tariff patterns based on the unit cost and regional condition. The revenue should be used to support the hospital operational budget and must not be used as a source of government income.

The background of the act is a philosophical motivation to provide better services for the community. Since hospital services cannot be differentiated clearly from hospital care, the philosophical basis is needed to pave the way of the act toward the value of care. The act also has a sociologic background, intending to give balance between business-oriented services and the social responsibility of health care organizations. The hospital as a health care institution must be framed in a clear legal framework, since it has a very unique relation with its customers and other stakeholders. This is the juridical background of the Hospital Act 2009.

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Chapter Three
Introduction: Organization and Individual Change: Managing for change

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Overview of Chapter: Managing for change

In the previous chapter we have defined hospitals in terms of their size and functions, their position in the local health system and the range of services that they offer. But hospitals are complex systems, operating in a complex environment. They are in a constant state of change. They face decentralisation within the health sector, evolving structures, new technology, growing professional pressures and ever higher expectations from their clients.

Content

1.   Hospitals are Complex Organizations

As complex organizations, hospitals have particular characteristics that make the management of change difficult (Kernick, 2006). The many different departments in the hospital interact with each other in a network of formal and informal relationships. Staff have many differing roles – they may represent their discipline or ward, negotiate with visiting program supervisors, engage in on-going education, relate to patients and colleagues, process reports or financial records. Their personal relationships overlap with their professional roles – they work more easily with friends and relations, and previous conflicts may influence interactions with others. Services such as surgery may seem to act relatively independently. In fact,

they rely heavily on collaborative support from other departments such as Radiology, Pathology and the Blood Bank, but also from areas such as Finance and Administration, and even Maintenance and the cleaning staff (Anderson and McDaniel, 2000).

But complex relationships do not stop at the hospital gates. Good obstetric care requires effective referral systems from the health centre level – with midwives who understand the criteria for referral, and supportive systems of transport (Engenderhealth, 2003). Hospitals report to the local, provincial and national authorities, depending on each specific program and their organizational links. With many different stakeholders inside and outside the hospital, different units within the hospital may act in ignorance of other units – or in completely contradictory ways. New patterns of activity emerge that consciously or unconsciously reflect this. Higher travel allowances in one program will put pressure on others to match. If patients do not understand what is considered an after-hours emergency, then the public may expect access to 24 hour routine clinical care, even when the polyclinic is closed. There may be many reasons for the high levels of turnover of senior staff, but this quickly erodes the corporate memory of why things are done in specific ways.

Achieving change seems unpredictable. Managers become frustrated when a large investment of time, energy and funding brings about change that is unsustained once the program finishes. And with Health Management Information Systems reporting to different levels of the health system or different programs, information may be duplicated or contradictory. Different funding sources may produce distortions in the resources available to neighbouring hospitals, wards, staff – or patients. On the other hand, small inputs can sometimes result in an unexpectedly positive response (Gatrell, 2005). Previous positive experiences build 'credit' and result in unexpected support when new changes are necessary. One enthusiastic health worker can change the whole atmosphere of a hospital – and the popular reputation of a service.

2.   Managers and change

Hospital managers continually make efforts to accomplish successful and significant change. It's inherent in their jobs. Some are very good at this (probably more than we realize), while others continually struggle and fail.

Today's hospital managers have two main roles: to maintain the functions of the hospital, and to lead and manage change within the hospital. Most professional organizations are good at maintaining activities. They have usually had in-service training that makes them aware of the bureaucratic structures, line management, protocols and regulations to ensure that hospital core functions are kept functioning efficiently, and report regularly to higher levels in the system. But to provide direction for the hospital through a constantly changing environment requires a different set of skills, and a willingness to manage using a combination of experience, intuition, consultation and communication to reach solutions (Bate, 2000).

Before managers can organize for change, they need to change their own personal paradigms and behaviours in advance. Their personal capacity to change is an important precursor to the success of organization change. Hospital managers need to be able to demonstrate their own capacity to change if they wish to enhance the effectiveness of change process. This can be challenging, since it is expressed in day-to-day behaviours that are observed by the whole organization. But leaders who practice change management in their own positions, before expecting it of others, can create a vision that their staff find credible, and are willing to implement. In practice, change management, at both organization and individual levels, is an important element of the nature of today's health care organization.

3. Leadership for change

Change management depends on a combination of positive leadership and good management. Effective management for change needs dynamic leadership as well – grounded in experience, but skilled in analysis, setting direction and mobilizing staff into action. Management functions within organizations are largely agreed on by most theorists. They include planning, structuring, organizing, implementing, monitoring and evaluating. Managers apply these functions to ensure the optimal operation of their human, physical and financial resources in the provision of health care services in the community. These functions will be discussed in depth in later chapters. But as Kotterman (2006) points out, while management functions seem easier to define, capturing a consensus on what is effective leadership has proven more difficult.

Earlier theorists examined the lives of recognized leaders, identifying a series of traits that contributed to their success – without reaching any useful consensus. While definitions of leadership are also varied, the simplest definitions point to their capacity to influence others in getting things done, and in setting directions that others follow (Manion, 2005, 2-3). While there is debate as to the personal attributes that make good leaders, a consistent set of values is necessary to create the organizational environment where change is possible. Galer et al., (2005) suggest that these include:

- **Integrity and commitment**: the personal values of leaders are reflected in their organization, both through imitation by their followers, but also in the kinds of structures and practices that are developed. Personal integrity is crucial – abuse of power, exploitation of corporate resources, nepotism and cronyism all undermine respect.
- **Respect and trust**: change only operates in an environment of trust, where staff feel valued, their opinions heard and their experience tells them that the judgement of their leaders is sound.
- **Courage to take risks**: while management depends on well-tried processes and clear protocols to sustain activities, change leadership, especially addressing new challenges, may need action where no blue-prints exist. Where limited evidence is available to take action, courage is needed to act. Taking 'good enough' action now is sometimes more important than taking the 'best' action, but after the window of opportunity has passed.
- **Continuous learning**: if leaders are going to take courageous action – then there will be times that this action is not correct. Constant monitoring of directions - and a willingness to change when change is necessary – are essential values of leadership.

4.   Leadership in Complex Organizations

While managing the clinical systems and business functions of the hospital requires well defined management skills and practices, the management of complex organizations requires more flexible and responsive leadership. Leadership for change builds on the practices of effective leadership (Marion and Uhl-Bien, 2001; Anderson and McDaniel, 2000; Galer et al., 2005):

- **Scanning**: Leaders maintain their awareness of the internal and external environments in which they work. They are sensitive to change, watching for trends, emerging opportunities, aware of weaknesses as well as strengths in their organization.
- **Focussing**: Leaders think systematically – watching for patterns and emerging change. Making sense of the situation is often more important than decision-making for change leaders – being able to hold the complexity of a situation, but point to a direction through it.
- **Aligning and mobilizing**: Leaders of complex organizations create networks and alliances for change, extending decision-making to these, and expecting outcomes as result of their trust. They provide direction, but accept diversity and encourage innovation and initiative, rewarding new directions that improve quality and promote the achievement of hospital objectives.
- **Inspiring**: Leaders provide a symbolic focus for organizations – setting an example in terms of their own dynamism and commitment, and openness to change. They build trust by expressing trust, and build organizational norms by modelling – and rewarding - positive behaviours.

5. Followership

Of course, all effective leaders have a two-way relationship with those who follow them. The building of networks, the delegation of decision-making, the inspiration and mobilization of workers are all predicated on trust and a confidence in the directions in which the leader is taking the organization. While leaders provide vision and direction, organizational culture reflects the response to this, and is built on changing norms, attitudes, practices and behaviours. This takes time, and is a product of the history of interactions between managers and workers, leaders and followers. Staff who have experienced trust build greater trust; successful innovation builds confidence; learning from errors and responding appropriately builds quality. Followers who have a solid relationship with their leaders, based on positive experience, form the basis of organizations ready for change.

6.   Change-ready organizations

Hospital managers have now accepted that any organization's long-term success requires a constant state of change readiness. A change-ready hospital organization continually builds its capacity to respond to a complex and ever-changing health care environment. Change-ready and high performing hospital organizations recognize that stakeholders and customers have competing needs. Unfortunately, all these needs cannot be satisfied all the time. Therefore, hospital managers have to manage to identify those stakeholder needs that are essential for the success of activities within the hospital (Peirce, 2000). They can then design strategies for ensuring ongoing satisfaction of these needs, building on their organization's existing values and competencies. Finally, change-ready organizations accept responsibility for developing the competency of their managers –and all their staff - to implement these strategies.

7.   Change Management Theory

Kurt Lewin's Change Management Concept has been widely used in many organizations - including hospitals – for over 60 years. Although there are global trends to greater complexity in hospital organizations, it still remains a useful framework for understanding change management. Lewin divides the change process into three parts. The first is an 'unfreezing' phase, during which previous structures and behaviours are questioned and the situation becomes receptive to change. This creates the possibility of a 'moving' phase during which the necessary changes can be undertaken. Finally, a 'freezing' phase, consolidates these changes, incorporating them into organizational routines and ensuring their sustainability (Burns 2004a, 2004b). For each phase, there are steps and procedures to be taken.

8.   Field Theory: understanding complex environments

This cyclical process of change management starts from problem identification and analysis, leading to an intervention and followed by evaluation. To start change management, managers identify the need for change, and the obstacles to that change. To do this they need a deep understanding of the context – or 'field' - in which they work. Lewin argued that the current situation is always maintained by a network of conditions

or forces that meet the needs of stakeholders within the hospital. This serves to maintain the status quo, and creates an environment resistant to change (Burns, 2004a). Individual behaviours are always a product of the influences experienced in the 'field' where they work. Influencing these group norms and behaviours allows individuals to choose alternative actions. Managers need to map out the interests of key stakeholders – and their capacity to promote or obstruct proposed change. This enables managers to plan how they will work with these stakeholders to ensure that change is possible (Varvasovszky and Brugha, 2000).

9.   Group dynamics: ensuring a critical mass for change

While individuals – such as managers – can have a significant impact on an organization, effective and sustainable change is dependent on transforming group norms, roles, interactions and socialisation (Burns, 2004b). Change is made much easier where a staff – or patients - are dissatisfied with current services and eager to move towards something different. Individuals change their behaviours as a result of changes within the group. It is the group that supports change during the transition and then adopts it into its new routine, and a critical mass of support is necessary to ensure sustained change.

This course recognizes the importance of group dynamics in enabling change by selecting teams of staff, across disciplines within a hospital for training. Provincial and District authorities have agreed not to transfer these staff during their training program. This has been an important element in ensuring a stable cluster of staff who are able to support each other in learning and bringing about change in their own hospital. And while only a limited number of students are able to be trained at any one time, their collaboration with management and colleagues is important to the success of quality improvement initiatives that they seek to introduce.

10.   Action research: working for change

Change management relies on an Action Research approach to be successful. This engages stakeholders in identifying issues and analysing the current situation, planning new initiatives and collaborating in their implementation and evaluation. While this participatory model is crucial to bringing about change, Lewin observed that it can be short lived. It

must be 'locked in' through shifts in organizational culture, norms, policies and practices. Once that has been achieved, the 'new' initiative becomes accepted practice (Burns, 2004b).

11.   Three steps to change: Unfreezing, Movement and Freezing

For Lewin, the combination of his Field Theory with his understanding of Group Dynamics set the framework for change: understanding the current situation and the competing interests of stakeholders, and working with them through the process of Action Research to bring about a new equilibrium. The model of change that he developed is based on three steps:

Step 1: Unfreezing: before change can occur, the current patterns of behaviour need to be disrupted. This can be either as a result of external changes outside the control of the organization, or as a result of deliberate interventions. Once the status quo has been destabilised, new possibilities arise – hopefully in the directions that managers are planning.

Step 2: Moving: 'unfreezing' a situation opens it up to a range of possible options. However it risks reverting to the previous condition unless purposive steps are taken to introduce and model new behaviours, to promote acceptance in the group and reinforce them as part of the organization's new norms. The 'edge of chaos' between the former structure and the world of new possibilities requires skilful direction to ensure that the shift is in the desired direction. Thorough planning lays a foundation for this, but ongoing monitoring, engaging feedback and adapting the plan to meet unexpected challenges are always necessary. In this phase, managers feel like they are managing both order and disorder at the same time.

Step 3: Refreezing: Now the new behaviours, perhaps tentatively tried by hospital staff, need to be 'locked in'. Positive reinforcement of actions, formalising processes through regulation or guidelines, and consolidating emerging structures all lead to group acceptance of the new equilibrium, and the 'changes' now become routine (Burns, 2004a, 2004b).

The Hospital Management Training has sought to implement Lewin's theories in the development and implementation of the course. It has consulted with stakeholders at Provincial and District level to understand

what their expectations are for hospital management. It has aligned the training with new initiatives impacting on hospitals – decentralisation and moves towards accreditation and autonomy. Working with Gadjah Mada University and the University of Mataram, and the hospital managers, teams of students are selected for training within hospitals. They provide feedback to other staff at the end of each block, promoting the new concepts and directions resulting from their training. The Quality Improvement exercise gives them the opportunity to experiment with change. They identify a single issue that they believe is important and work with the hospital to introduce new practices in areas such as patient safety, infection control or emergency triage. In this way they are demonstrating leadership among their colleagues – leadership for change.

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Chapter Four
Putting the patient first: Patient safety and customer-focused services

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Overview of module:

This is the first training module that consists of four main parts. Starting with dynamic changes at the global and national level affecting hospitals in Indonesia, the module focuses on patient safety. This has a significant impact on hospitals from the patient perspective. Patient safety reflects the core business of any health care organization, and may further affect other components of hospital safety and survival. Therefore, communicating patient safety to patients and care takers empowers them as partners of health professionals in the minimization of risks and prevention of adverse events. The final part of the module emphasizes patients as external customers. As customers, their needs, expectations and experiences should be addressed by the hospital in the effort to develop a customer-focused hospital service.

Key readings linked to the module:

The following list is additional learning resources to be used for further references in relation to the module. Issues are further explored in these readings, such as:

■ How does patient safety relate to quality? Is our hospital safe or unsafe for our patients?
■ Have we (unintentionally) put patients at additional risk while delivering services?
■ What indicators can we use to measure patient safety? Are they different from quality and clinical indicators?
■ What kind of system improvements are needed to ensure safety culture?

Reading materials for the module:

- Departemen Kesehatan. *Panduan Nasional Komite Keselamatan Pasien Rumah Sakit (Patient Safety): Utamakan Keselamatan Pasien*. Jakarta: Departemen Kesehatan; 2006.
- Kohn LT, Corrigan JM, Donaldson MS (eds). *To Err is Human: Building a Safer Health System*. Washington DC: The National Academies Press; 1999.
- Institute of Medicine. *Crossing the Quality Chasm: a New Health System for the 21st Century*. Washington DC: *The National Academies Press*; 2001.
- Institute of Medicine. *Patient Safety: Achieving a New Standard for Care*. Washington DC: The National Academies Press; 2004.

Learning objectives:

After completing this module, you should be able to:

1. Identify dynamic changes in the external environment affecting hospitals
2. Elaborate the new paradigms in hospital services and their effects on current practices in managing hospitals
3. Appraise patient safety and customer-focused services
4. Conduct measurement of patient safety
5. Analyze customer needs and expectations
6. Recognize and practice skills in communicating patient safety

Content:

A.   Dynamic changes in the external environment affecting hospitals

Health care industries, especially hospitals, have the unique characteristics of being knowledge intensive, technology intensive and capital intensive. The health care industry is a knowledge intensive industry due to the nature of the hospitals and the high-skilled professionals engaged in delivering the service. The knowledge and skills required by these professionals are standardized globally, and those who fail to continuously update their knowledge and skills risk losing credibility with their patients. Therefore, competition is highly driven by knowledge content and how the organization ensures and improves its learning capacity. New knowledge should be acquired, updated, managed and applied accordingly, in order to deliver the most appropriate care for patients based on the current best available evidence (Evidence-Based Medicine).

Hospitals are also technology intensive. There is a vast number of different types of sophisticated technologies used in care processes. In parallel, new technologies keep emerging rapidly to improve patient outcomes for patients and health professionals as well as to reduce potential hazardous risks both for the patients and health care professionals. In addition to challenges in managing these technologies well, it is surprising to observe how rapidly hospitals in Indonesia are investing in these technologies, and implementing their use. For illustration, the latest whole body CT scan launched in the year 2000 was already available in certain hospitals in Jakarta in the same year (personal observation). Standardized medical technologies require health professionals, as knowledge workers, to have updated knowledge to apply these technologies for the benefit of the patients. Both characteristics of hospitals, i.e. knowledge and technology intensive, lead to the third characteristic of hospitals: capital intensive industries.

Understanding these hospital characteristics, it is obvious that good governance and management systems must be in place to achieve the desired level of performance. The need to improve hospital management systems is constantly challenged by dynamic changes in the external

environment, at all levels. At the international level, globalization, macroenomic changes, information technology are among the noticeable changes affecting hospitals in Indonesia. For illustration, few years ago, a district hospital in West Sumatra province would have not expected to compete with a hospital in Malaka, Malaysia – but social and economic changes, and improved transportation links have made this possible. Likewise, changes at the national level that affect hospitals also exist, such as the decentralized health system, hospitals being granted recognition as Public Service Institutions (BLU), a new financing scheme for the poor, the Indonesian Diagnosis Related Groups, hospital minimum service standards and many others. Patient's needs, expectations and care-seeking behaviour have also changed in parallel to increasing the number of hospitals, especially private hospitals. During the 15 years period between 1990 and 2005, the growth of private hospitals in Indonesia has nearly doubled (Bank Dunia, 2008). Nowadays, a much higher demand is placed by the community on hospital services. When unmet, the patient's voice can now be expressed through varying channels, such as complaints procedures, letters published in the mass media - even through taking legal action. All these changes affect customer satisfaction, promote competition and serve to introduce further changes. In order to survive, hospitals must develop their capacity in trendwatching and in giving appropriate responses.

B.   Patient safety

> **Box 8. Wrong leg amputation**
>
> A male adult patient was admitted to a hospital for a leg amputation. After the surgery, it was discovered that the wrong leg was amputated.

Our understanding of health care organizations as risk intensive organizations has tremendously increased since late 1990s. Since that period, different mass media and publications have started to draw attention to various "adverse events" experienced by patients as they receive care in various health facilities. The first publication on this was written by the Institute of Medicine (IOM), and entitled "To err is human: building a safer health system" (Kohn et al., 2000). Figures began to emerge to illustrate how large the problem was. For example, in the USA, medical errors cause 44,000-98,000 deaths every year, higher than the

deaths due to car accidents, breast cancer and AIDS. The risk of injury or death in health services was 10,000 times higher than in the aviation industry. Medical errors occurred in 1 out of 200 cases in comparison to 1 error out of 2,000,000 events in aviation (Tanne, 1997). Annual deaths from medical error in the USA are the equivalent of two 747s crashing every three days. Early studies in USA, Australia, New Zealand, Canada and Europe have recently documented the rate of adverse events, finding it varied between 3.2%-16.6% of hospital discharges (WHO, 2004). Certainly, these facts receive global attention.

In the patient safety literature, new terminologies have emerged reflecting the progress of knowledge in this area. The most commonly used terms are adverse events and medical errors. The Institute of Medicine defines errors as failure of a planned action to be completed as intended (error of execution) or use of a wrong plan to achieve an aim (error of planning) (Kohn et al., 2000). The interrelation between adverse event and medical error is embedded in the following definitions. An adverse event is defined as injuries caused by medical management, while a medical error is preventable adverse event. Both adverse events and medical errors can be differentiated according to care processes, (i.e. diagnosis, treatment, prevention and others), professionals (medical errors, nursing errors, etc) and others. Another classification of errors are errors of omission and errors of commission. Error of omission reflect omissions of care processes that are supposed to be carried out. For example, appendictomy surgery carried out without biopsy, not prescribing anti-tuberculosis drugs for TB patients. An error of commission indicates care processes that are conducted inappropriately, such as the incorrect administration of antibiotics, wrong route injection, or wrong leg amputation. Errors in the system, design of organization, training or maintenance (latent errors) could lead to errors at the level of frontline operators (active errors). In addition to different types of error, the term near-miss is used to illustrate those errors that could have resulted in accidents, trauma or diseases, but have not occured due to unintentional prevention or immediate actions taken (Kohn et al., 2000; Reason, 1997).

Most studies on adverse events have been initiated conducted in inpatient setting of hospitals. Later, more specific studies have focused on specific hospital units or services (such as ICU, emergency, pediatrics) and for

specific diseases. Publications on patient safety are also available from the primary care setting, where, in reality, adverse events also occur.

In Indonesia, studies on patient safety have also been emerging. Two illustrations are given here. The first example was a study carried out in 15 hospitals and 12 health centres with inpatient service in Central Java province using the medical records as the main data source (Utarini, 2000). A number of 4,500 hospital records and 529 health centre records was reviewed to describe the occurence of errors of commission and omission as well as errors in diagnostic and treatment. The findings revealed that the occurrence of medical errors ranged from 1.82-88.8%. Both values occured in acute respiratory case infection in children (i.e. 1.82% diagnosis errors and 88.8% treatment errors for antibiotic use).

Secondly, Yulianto (2007) compared surgical site infection in patients undergoing surgery before and after intervention in a private hospital. Prior to the intervention, surgical site infection (SSI) was found in 21 (47.7%) out of 44 patients from surgery and obstetrics department. Most of the SSI (18 or 85.6%) occured within three days after surgery. Following redesign of the operating room and behaviour change intervention of the operating room staff, SSI decreased to only 14 (25.9%) out of 54 patients and only 6 (42.8%) patients experienced SSI within three days after surgery.

Medical errors and adverse events are global problems, but despite many studies conducted worldwide, the lessons learnt remain straight forward. Patient safety problems are found everywhere, irrespective of the characteristics of the country, health system, health facilities, providers and patients. The IOM report put it as "to err is human" (Kohn et al., 2000). Naturally, humans do make mistakes: fallibility is part of the human condition that cannot be changed. Instead, it is the conditions under which people work that can be changed (Reason, 1997). Leape (2009) further emphasizes that human beings make mistakes because the systems, tasks and processes they work in are poorly designed.

What causes errors? Reason (1997) uses Swiss cheese as a model to illustrate the causes of errors: multiple factors at multiple levels interconnected to each other. A simple illustration is given here to analyse why patients receive wrong drugs. Starting backwards, the chain can be described as the following. Patients receive wrong drugs because: the

wrong drugs are taken from the shelf; the prescription is misread, resulting in a choice of the wrong drugs; there is no confirmation with the prescribers desite the handwriting in the prescription being poorly legible. Using the model, the underlying systems-related factors are clearly illustrated.

Table 6. What causes errors?

Person-centered approach	Systems approach
Individuals who make errors are careless, at fault, reckless	Poor organizational design sets people up to fail
Blame and punish	Focus on the system, rather than the individuals
Remove individual	Improve the system

Thus, patient safety is definitely beyond an individual problem – it is a systems problem. Safety is everybody's business. It is not primarily the concern of the medical doctor, nurse and other health professionals, but it is everybody's concern. The culture of blame, such as denial, dishonesty with patients, non-reporting behaviour, covering-up, will prevent the organization improving patient safety. A systems approach should instead be implemented to address and improve patient safety. All staff working in the hospital setting must be aware of patient safety. The top management needs to recognize that there are weaknesses in the system, and anticipate errors, setting up mechanisms that reduce them. Safety issues need to be considered regularly at the highest level. Past adverse events are reviewed to identify system weaknesses and recommend changes to be implemented. Building this new patient safety culture needs to be initiated from the top hospital manager and spread to all levels within the hospital.

Patient safety is a core principle in delivering services, including in hospitals. It is an entry point for the hospitals to prioritize four other safety components: provider safety, occupational safety, environmental safety and organizational safety. To ensure that patient safety is adopted by hospitals and other health care facilities, different international organizations such as WHO, the Institute of Healthcare Improvement and the Joint Commission on Accreditation of Healthcare Organization in USA, and the Australian Council for Safety and Quality in Health Care in Australia have launched the patient safety movement. Indonesia is not an exception. A national hospital patient

safety committee was set up by the Ministry of Health in collaboration with the Indonesian Hospital Association in year 2005. In year 2006, road show activities were planned for the main cities in Indonesia, and conducted by the hospital patient safety committee, followed by pilot implementation in certain hospitals.

Patient safety initiatives continue to be encouraged, supported by existing guidelines and standards. In Indonesia, implementation of patient safety standards is integrated in the national hospital accreditation. The standards consist of seven areas, as follows (Departemen Kesehatan, 2006):

1. Patient rights
2. Education of patients and care takers
3. Patient safety and continuity of care
4. Implementation of quality improvement tools to evaluate a patient safety improvement program
5. The role of leadership in improving patient safety
6. Education of staff on patient safety
7. Communication as a key for staff to ensure patient safety
8. Timely transmission of accurate data and information

As a guideline for health care organizations to implement a patient safety improvement program, the following seven steps are recommended (Departemen Kesehatan, 2006):

1. Create awareness of patient safety
2. Lead and support the staff
3. Introduce risk management activities
4. Develop a reporting system
5. Involve and communicate with the patients
6. Learn and share experiences on patient safety
7. Prevent adverse events through the implementation of patient safety

In order for something to be improved, it has to be measured first. Health care organizations are no exception to this. Therefore, health care providers, consumers, policy makers and other stakeholders who are involved in pursuing high quality care need a set of indicators to describe the current situation. Although indicators cannot provide definitive measures of health care quality, they can be used for a range of functions:

- ■ to show trends in achievements
- ■ to indicate potential problems
- ■ to make comparisons (such as across providers, health facilities, regions)
- ■ as a starting point or baseline for further investigation and improvement actions.

Progress on patient safety improvement program needs to be properly monitored, evaluated, then improved. For this purpose, a Patient Safety Indicator (PSI) tool has been developed to help identify potential adverse events occurring during hospitalization (AHRQ Quality Indicator, 2003). The PSI includes quality indicators that specifically focus on patient safety. McDonald et al. (2003) define the indicators on two levels, i.e. the provider level and the area level:

Hospital-level indicators   *Hospital-level indicators*: provide a measure of the potentially preventable complication for patients who received their initial care and the complication of care within the same hospitalization. Provider-level Indicators include only those cases where a secondary diagnosis code flags a potentially preventable complication.

Area-level indicators   *Area-level Indicators*: capture all cases of the potentially preventable complication that occur in a given area (e.g., district, province) either during hospitalization or resulting in subsequent hospitalization. Area-level Indicators are specified to include principal diagnosis, as well as secondary diagnoses, for the complications of care. This specification adds cases where a patient's risk of the complication occurred in a separate hospitalization".

The examples of PSI below are taken from the American Agency for Healthcare Research and Quality (AHRQ), based on hospital administrative data that are readily available and relatively inexpensive to use. Despite their ready availability, and usefulness of these indicators, hospital administrative data have limitations in seeking to portray certain aspects of patient safety. For instance, indicators on adverse drug events, which significantly contribute to adverse events, cannot be produced from administrative data – this requires the creation of an adverse events notification system. Nevertheless, careful use and interpretation of

administrative data is a good basis for conducting further investigations. The ability to assess all patients at risk for a particular patient safety problem, along with the relatively low cost is the strength of these hospital administrative data sets (AHRQ 2003, pp 19-20).

There are 27 AHRQ indicators, most related to surgical and obstetric care, as follows:

1. Hospital-level Patient Safety Indicators (20 Indicators)
   - Complications of anesthesia (PSI 1)
   - Death in low mortality DRGs (PSI 2)
   - Decubitus ulcer (PSI 3)
   - Failure to rescue (PSI 4)
   - Foreign body left in during procedure (PSI 5)
   - Iatrogenic pneumothorax (PSI 6)
   - Selected infections due to medical care (PSI 7)
   - Postoperative hip fracture (PSI 8)
   - Postoperative hemorrhage or hematoma (PSI 9)
   - Postoperative physiologic and metabolic derangements (PSI 10)
   - Postoperative respiratory failure (PSI 11)
   - Postoperative pulmonary embolism or deep vein thrombosis (PSI 12)
   - Postoperative sepsis (PSI 13)
   - Postoperative wound dehiscence in abdominopelvic surgical patients (PSI 14)
   - Accidental puncture and laceration (PSI 15)
   - Transfusion reaction (PSI 16)
   - Birth trauma -- injury to neonate (PSI 17)
   - Obstetric trauma -- vaginal delivery with instrument (PSI 18)
   - Obstetric trauma -- vaginal delivery without instrument (PSI 19)
   - Obstetric trauma -- cesarean delivery (PSI 20)

2. Area-level Patient Safety Indicators (7 Indicators)
   - Foreign body left in during procedure (PSI 21)
   - Iatrogenic pneumothorax (PSI 22)

- Selected infections due to medical care (PSI 23)
- Postoperative wound dehiscence in abdominopelvic surgical patients (PSI 24)
- Accidental puncture and laceration (PSI 25)
- Transfusion reaction (PSI 26)
- Post-operative hemorrhage or hematoma (PSI 27)

These indicators are currently being used for applications beyond quality improvement. Some organizations have used the indicators to produce web-based, comparative reports on hospital quality, which also provided users with guidance on how to interpret the indicators. Other organizations have incorporated selected AHRQ indicators into financial incentive for rewarding hospital performance. In Indonesia, patient safety indicators have not been launched up to currently. However, few patient indicators listed above have actually been incorporated to other quality indicators related to health-care associated infections. A national voluntary-confidential reporting of adverse events has also been established for hospitals in Indonesia and hospitals have started to report occurrence of adverse events to the Indonesian Hospital Association.

C.   Communicating patient safety

> **Box 9. Where is the patient in patient safety?**
>
> - How are patients involved in patient safety in your hospital?
> - What efforts has your hospital made to involve them?
> - What significant changes have resulted from involving patients?

As they become aware of patient safety issues in hospitals and their tremendous affect to the the organizations, health care organizations to recognize that patients play a key role to produce the intended outcome. Patients and care givers can be leaders in this area of change. Consequently, a proactive approach in engaging patients should be integrated in the implementation of patient safety. This does not only involve patients in making decisions throughout the care processes, but also empowering them to join a partnership with the hospital in preventing adverse event incidents. Vincent and Coulter (2002) further specifies five key roles of the

patients in promoting patient safety. These consist of involving patients in:

- Helping to reach an accurate diagnosis
- Deciding an appropriate treatment or management strategy
- Choosing a suitably experienced and safe provider
- Ensuring the treatment is appropriately administered, monitored and adhered to.
- Identifying side effects or adverse events quickly and taking appropriate action

Beyond the care processes, there are further opportunities to involve patients in service development (service level) and even strategic policy making (organizational level). The modes of participation vary from informing, consulting, and even formal partnerships (National Health Service - NHS Trust, 2002). The following expectations are achieved by involving patients and carers: better quality services, decisions are more patient-focused, improved communication and greater ownership, and stronger understanding of the need to improve.

Table 7. Patient involvement and its purpose

Modes of participation	Levels of contact		
	Strategic policy making (organization level)	Service development (service level)	Diagnosis and treatment process (individual level)
Informing			
Consulting			
Partnership			

(Source: NHS Trust, 2002)

In the context of patient safety initiatives, promoting patient safety to patients and care takers will first involve educating patients on patient safety in order to prevent and early recognize incidents. When the patients are aware of the issues, their understanding and support can be expected in the event of patient safety incidents.

Many international organizations working on communicating patient safety have published leaflets and booklets for patients to be aware of this issue and to assist health professionals/hospitals to ascertain patient safety.

For illustrations, five steps for a safer health care was produced by U.S. Department of Health and Human Services in partnership with American Hospital Association and American Medical Association in 1999. These include:

- Ask questions if you have doubts or concerns
- Keep and bring a list of ALL medicines you take
- Get the result of any tests or procedures
- Talk to your doctor about which hospital is best for your health needs
- Make sure you understand what will happen if you need surgery

Another example of advocating patient safety to patients is a campaign on "Speak up for Patient Safety" initiated by the Joint Commission on Accreditation of Healthcare Organization (JCAHO, 2009). Speak up stands for:

- **S**peak up if you have questions or concerns
- **P**ay attention to the care you get
- **E**ducate yourself about your illness
- **A**sk a trusted family member of friend to be your advocate
- **K**now what medicines you take and why you take them
- **U**se a hospital, clinic, surgery center or other type of health care organization that has been carefully checked out.
- **P**articipate in all decisions about your treatment

Despite all the best efforts in developing a patient safety system, incidents will continue to happen, and handling adverse events in an appropriate way is critical. When adverse events occur in the care delivery processes, research evidence shows that the most important principle in communicating patient safety with patients or care takers is open disclosure. This principle is simple, yet very critical, as systematic efforts to deny the incidents will only make things worse. Nowadays, patients and communities are increasingly informed concerning the importance of open disclosure, and as the result, the demand for receiving transparent and clear information, especially around adverse events, is becoming higher.

The National Health Service in the United Kingdom developped the "Being Open" initiative, with the following 10 principles (National Patient Safety Agency, 2005):

1. Principle of acknowledgement: to acknowledge and report all adverse event incidents.
2. Principle of truthfulness, timeliness and clarify of communication: the incidents should be described timely, truthfully and unambiguously, as soon as possible.
3. Principle of apology: a sincere expression of regret for the harm, in an agreed manner of apology, in writing or verbally.
4. Principle of recognising patient and carer expectations: expectations following an adverse event incidents must be identified through face-to-face meeting, carried out with respect, consideration and confidentiality maintained.
5. Principle of professional support: through application of a systematic approach to support all staff involved in the incident investigation process.
6. Principle of risk management and systems improvement: following an adverse event incident, the underlying causes should be discovered applying existing tools such as root cause analysis, significant event audit or others.
7. Principle of multidisciplinary responsibility: ensuring multidisciplinary involvement in the investigation process and clinical risk management.
8. Principle of clinical governance: clinical governance frameworks ensure the support of patient safety and quality improvement processes to prevent the recurrence. It also applied clinical risk management, clinical audits, continuous professional development to ensure that the lessons learned are drawn for the organizations to improve the system better.
9. Principle of confidentiality: all processes in being open are carried out with high confidential for the benefit of the patients. Communications to other parties should be limited or conducted in agreement with the patients or care takers.
10. Principle of continuity of care: care will be continued in a normal way after the incidents and patients are given choices to continue receiving care from the hospital or to be referred to other hospitals.

To implement this policy, and apply these principles, the Being Open Process includes 6 steps (NHS Trust, 2007). The steps are:

Figure 18. Being Open Process

Incident detection or recognition

Initiating the Being Open process

The initial Being Open discussion

Documentation & Communication

Preliminary follow-up

Completing the Process
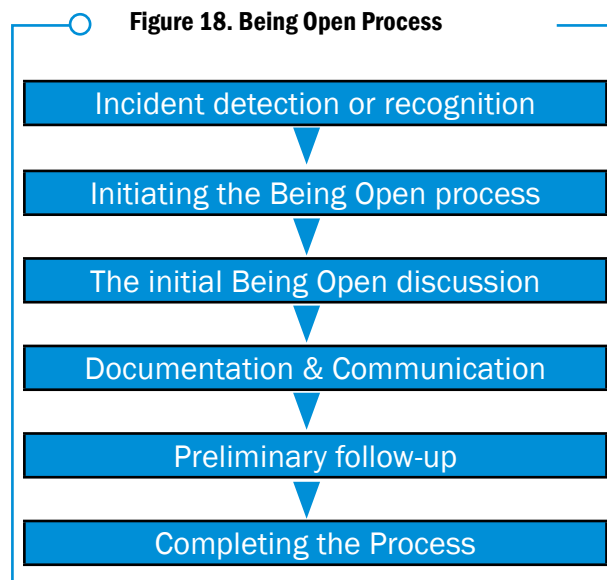
In each of these steps, it is very important to have all stakeholders (the hospital managers, providers and patients/care takers) fully committed and engaged in applying the principles of being open. Its implementation clearly has consequences for the organization, as well as for health care professionals. For the organization, being open involves the following (NHS Trust, 2007)

■ Acknowledging, apologising and explaining when things go wrong;
■ Conducting a thorough investigation into the incident and reassuring patients and/or their carers that lessons learned will help prevent the incident recurring; and
■ Providing support to cope with the physical and phychological consequences of what happened

While for health care professionals, being open involves:

■ Satisfaction that communication with patients and/or their carers following an adverse event incident has been handled in the most appropriate way;
■ Improving the understanding of incidents from the perspective of the patient and/or their carers;
■ The knowledge that lessons learned from incident will help prevent them happening again;

■ Having a good professional reputation for handling a difficult situation well and earning respect among peers and colleagues

D. Customer-focused services

The customer is the main rationale for any health care organizations to continue its services. Therefore, to ensure the survival and growth of any health care organization, the hospital must provide services that are highly valued by their customers. Quality improvement and service performance are seen from this perspective.

Who are our customers? Answering this question is the first stage towards developing customer-focused services. Customers are all those who use the services produced by the hospitals. Applying the concept of a customer chain, there can be both internal as well as external customers. External customers are less likely to be identified but are still important to the success of the hospital: they are those who finally use the end product. The hospital internal and external customers include the patients, third-party payer, government agencies, health professionals working in the hospital, the family and the community at large as potential users etc. Having identified the customers, their expectations can then be defined.

In general, there are 10 patient expectations when using health care services. These expectations are developed into 10 principles in customer-focused services (Berwick, 2002 in Koentjoro, 2006):

1. Service goes beyond patient visits. Instead, it is a continuous relationship with patients/customers. Consequently, accessible service when in need, continuity of care, available information through various media are those that need to be in place in order for a service to be responsive to customer needs.
2. Services need to be customized and sensitive to individual needs, values and expectations. Recognition, respect, choices for any conditions of the patients should be fulfilled.
3. Decisions are made by the customers. Decisions are finally made by and for the patients, unless it is indicated otherwise by the patients. Therefore, information, opportunities to participate, and empowerment are crucial for a shared decision making process.
4. Information concerning the patients is accessible to the patients. Although medical records are kept in the hospital, the information

should be made accessible to the patients when is required, in order to improve communication between the clinician and patients.

5. Services are delivered, based on the best available scientific evidence to improve patient safety and quality. In this way, clinical excellence is assured irrespective of patient's socioeconomic background and providers. Enhancing access to information for clinicians would further encourage application of evidence-based medicine into actual services delivered to the patients.

6. Patient safety is the focus. Patients are at risk of medical errors and adverse events, therefore, a system to identify and prevent from these risks should be in place.

7. Transparency is essential. Patients want to exercise their choices, and to do so, information needed to make such decisions must be transparent.

8. Patient's needs should be anticipated. Hospitals should improve their ability to respond in a timely fashion to patient's needs, but also anticipate the needs appropriately.

9. Efficiency is important for patients and the organisation. Efficient delivery services in the use of resources (human, time, logistics and others) are required to prevent unnecessary interventions and repetitions.

10. Collaboration is necessary for effective services. Health care services involve high levels of complexity in terms of activities. These are heavily dependent on each other and on the health professionals delivering care to patients. Therefore, effective collaboration among the professionals involved should lead to effective and efficient services delivered to the customers. Fragmentation and barriers to coordinating and integrating care should be minimized to every possible extent.

Hospitals need to recognize their customers' expectations, needs and experiences. There are different methods of becoming aware of these expectations, ranging from a formal satisfaction survey of patients and families to group discussions, patient exit interviews and informal interviews. There can be used in addition to the secondary information from the patient complaints system, which every hospital should provide. A brief description of these method is given below.

Patient satisfaction surveys. This is a survey carried out periodically (depending on the purpose), and it can be conducted at different levels

in a particular service, unit, hospital or region. The patient satisfaction survey has two main purposes: to measure the current level of how well are the service/hospital/regions in satisfying the patients, and to highlight those areas with greater need for improvement. The second purpose is more important, as part of a larger effort to improve hospital services. The instruments may be developed by the hospital itself. Alternatively, more standardized instruments such as Servqual (Service quality) may be used. This encompasses five quality dimensions, i.e. tangibility, responsiveness, reliability, assurance, and emphathy (Zeithaml et al., 1990). Another instrument has been used in Hongkong with the advantage that the instrument is simple enough to be used across health care facilities and collected in a time-series manner. The dimensions consist of convenience, result (outcomes), environment, staff and procedure (Pun, 2000).

Focus group discussions (FGD). FGD uses a selected group of participants to explore perceptions and experiences in a structured format. This can be applied in a hospital setting, to explore patients' or care takers' perceptions and experiences of services received in the hospital. Normally, the group formation is homogenous to enable an open atmosphere for the members to express their opinions. The group size is limited to between 6-12, and the questions to trigger the discussions are focused. The discussion lasts for approximately 1 hour. The number of groups depend upon the scope of exploration and the variations of response that are anticipated. When successfully organized, FGD is an effective tool to gather perceptions and experiences.

Patient exit interview. Another method is an interview carried out to patients as they exit a service or a health facility. The interview can be structured (using close-ended questions) or informal (using open questions) and the questionnaire may be self-administered or interviewed. Patient exit interviews can be used for certain specific groups of patients (pregnant women, children, elderly, TB patients), or certain units or departments (outpatient or inpatient).

Patient complaints. A systematic way of documenting complaints may also be useful to identify customer needs and expectations. The method varies from providing boxes placed for the customer to write their complaints, dedicating a special counter (such as an information centre or customer

service) for receiving feedback and complaints, to a more proactive way of conducting special surveys on patient complaints. Regardless of the methods chosen, data on patient complaints provide additional information to prioritize areas for improvement.

Box 10. Practical exercise: Identification of customers

■ Compile a list of all your hospital customers (internal and external customers). How many of these have you become newly aware of because of this exercise?

■ Select a certain customer as a focus and decide a certain level in the hospital (unit level or hospital level), then plan how you would identify the needs, expectations and experiences?

To meet this challenge, customer-focused services need to be built within hospitals. According to the Institute of Medicine there are six dimensions in a customer-focused services (IOM, 2001). These are:

1. Respect values, preferences and needs expressed by the patients. Services that are customer-focused are able to respond appropriately and promply to their patients' needs and preferences. Patients are involved and empowered in any decision making process affecting their physical/emotional needs and quality of life in general. The services are also customized and sensitive to the patient's culture. Patient preference may be changing overtime, depending on the clinical problems and other circumstances. Therefore, ensuring joint decision making is crucial to make sure that the patients and/or families are well-informed and involved in care processes.

2. Coordinated and integrated care. Regardless of the clinical problems experienced by the patients, generally patients (especially those admitted in the hospital) have to go through many procedures to be diagnosed and treated and receive care from different health professionals. The more complicated the clinical problems are, the more multiple procedures and health professionals are involved in care processes. This then requires better coordination and integration of care.

3. Information, education and communication. "What is wrong with me, what is going to happen, how is it going to affect me and my life, and what should I do?" These are basic questions that any patients/ families need to know or to be informed of when suffering from

illnesses. Providing this information in a comfortable way, using a common language familiar to the patients is thus basic for patients. The information itself may be given by nurses, medical doctors or other professionals at different stages of care, taking advantage of existing health education media.

4. Amenities and physical comfort. The hospital environment is not a familiar setting for the patients and their families. It may not be comfortable for patients and it may not also accommodate their needs. On the other hand, patients admitted to the hospitals are obviously not in "normal" situations. Combining both the impact of their illness and the discomfort of their environment can compound unpleasant experiences.

5. Emotional support – overcoming fear and anxiety. Comprehensive care should also encompass the emotional and spiritual needs of the patients, not just focusing on the physical illness itself. The feeling of fear, anxiety, uncertainty, loneliness cannot be separated from the discomfort, pain and disability due to the illness. The social and financial impacts on the patients and families are also part of the concerns. Emotional support therefore needs to be provided along with the necessary clinical services.

6. Involvement of families and supporting groups. In care processes, families and supporting groups (friends etc.) may need to be involved in making decisions for the patients. In a hospital setting with limited resources, care activities are sometimes 'delegated' to them and their roles are even more important on a daily basis.

In order to develop a customer-focused service hospitals, understanding your customer's needs, expectations, values and experiences is crucial. Likewise, a system needs to be in place to identify changes in the customer's characteristics and manage customer experiences. The system requires the following aspects:

1. Mechanisms to identify customer requirements and efforts to meet the requirements;
2. Appropriate caring behaviour for the patients;
3. Continuous efforts to create customer loyalty and partnership through satisfying customers;
4. Measurement, evaluation and follow-up actions of customer voices, experiences, and complaints as the basis for improvement; and
5. Mechanisms to manage dissatisfied patients.

Summary of module content:

In summary, this module emphasizes the need for hospitals to refocus their business for the benefit of the patients as their main customer. This has been driven by global initiatives from both patient perspectives as well as professional and management viewpoints. Further advancement in managing the hospital at service, organization and environment levels must be geared towards putting the patient first.

Reflective questions:

You have been exposed to some key principles in patient-safety and customer-focused services. In your current position:

■ What influences or changes would you like to introduce for the near future to improve patient safety and customer-focused services?

■ How would you institutionalize the plan?

■ Patients is the most important stakeholders in a hospital. If the patients could run the hospital, how do you think they would change the way your hospital delivers its services?

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Chapter Five

Improving clinical performance: clinical management system

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Overview of module:

The previous chapter addressed patient/society perspectives, with particular focus on patient safety and customer-focused service. This perspective continues to be applied at the service operational level (also known as the microsystem level of care delivery), i.e. the level at which patients have direct interaction with care givers. The design, implementation and improvement of services delivered to patients should be carried out with a patient perspective in the providers' mindset. Patients may use diagnostic facilities, inpatient wards, operating theatre, outpatient clinics and other services. Issues such as the patient's experience of receiving care, patient satisfaction and safety mostly occur at this microsystem level. Therefore, understanding the complexity of management functions and improving clinical/service performance at this level ultimately determines the survival of a hospital.

This chapter addresses several topics related to the design, implementation and improvement of clinical management systems. Broadly, the topics are defined according to the activities at this microsystem level, i.e. clinical activities and business activities. Topics for clinical activities include clinical

governance and quality improvement, patient-provider interactions, care management models, supported by the management of business activities at a microsystem level, such as managing clinical information, managing team work and performance, making plans and budgets, planning and maintaining logistics, and managing the drug inventory.

Key readings linked to the module:

The following list is additional learning resources to be used for further references in relation to the module. Issues are further explored in these readings, such as:

- How do we design, implement and evaluate the clinical management system in our hospital? Have the designed incorporated clinical risk management principles?
- What factors need to be considered in clinical management system?

Reading materials for the module:

Foster ST. **Managing Quality: An integrative approach**. Second edition. New Jersey: Pearson Education Inc.; 2004.

Stamatis DH. **Total Quality Management in Health Care: Implementation strategies for optimum results**. Irwin Professional Publishing; 1996.

Trisnantoro L. **Memahami Penggunaan Ilmu Ekonomi dalam Manajemen Rumahsakit**. Yogyakarta: Gadjah Mada University Press; 2004

Vincent C. **Clinical risk management: enhancing patient safety**. London: BMJ Publishing Group; 2001.

Koentjoro T. **Regulasi Kesehatan di Indonesia**. Yogyakarta: Andi Offset; 2007.

Learning objectives:

After completing this module, you should be able to:

1. Identify and analyze problems related to management, service and risks at the microsystem level
2. Monitor and evaluate managerial processes and services at the microsystem level
3. Give suggestions for improving the design and implementation of risk management procedures for risk minimization.

Content:

A.   Microsystems in health care

The microsystem includes patients, clinicians (not only medical doctors), interconnected processes and recurring patterns such as cultural patterns, information flow patterns and results patterns. According to Nelson et al. (2002), the microsystem in health care can be defined as a small group of people who work together on a regular basis to provide care to discrete sub-populations of patients. Depending on the clinical problems, a microsystem for a given patient may vary from a simple process up to an extremely complex system involving several hospital units within and outside the hospitals. Consider an example of a journey experienced by a child suffering from malaria who is taken to a hospital. Within the hospital, the patient and care taker are going through the following units from registration up to pharmacy. The whole processes occur in the same day.

Figure 19. Example of a simple patient journey

| Outpatient registration | Examined at the Paediatric clinic | Lab test at the laboratory, waiting for result | Return to paediatric clinic, waiting for prescription | Take the drugs at the hospital pharmacy |
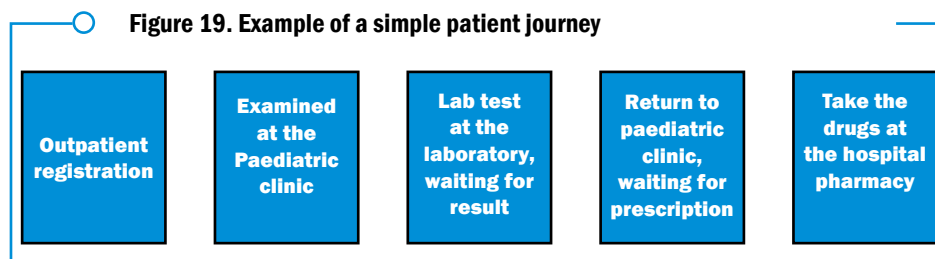
Although the above journey may be considered as relatively simple, problems related to management, service and risks may still be occurring. Examples of problems are given in the following table and all these could lead to poor outcome of malaria case management. For example, a recent study carried out in a hospital in Nias island shows that treatment error of commission occurs in nearly 80% of confirmed malaria cases or cases treated with malaria drugs (Hulu dkk. 2009).

Table 8. Potential managerial, service and risks related problems in the above patient journey

	Registration	Paediatric clinic	Laboratory	Paediatric clinic	Pharmacy
Management	Record keeping problems, lack of staff	Low staff incentives, incomplete records, inconvenient room, poor clinical quality	Logistics problems, no quality assurance, limited investment, poor lab staff skills	The same	Drugs out of stock, unclear handwriting, high cost of drugs
Service	Long waiting time, unclear information on administrative issues (eg for patients covered by insurance)	Long waiting time, inconvenient location, unfriendly staff	Long waiting time, unclear instructions,	The same	Lack of information given to patients, long waiting time,
Risks	More than 1 medical record for 1 patient	Incomplete history taking, diagnostic errors, errors of omission (not ordering lab tests),	Unsafe procedures, wrong labelling, wrong patient	Medication errors, errors of commission (wrong drugs, dose, frequency, route etc)	Multiple prescribing, drug interactions,

On the other extreme is an example of a maternal death case, which takes several days. The journey is complex and it involves microsystems in more than one setting (such as home, health centre and hospital) which eventually lead to death.

Table 9. Example of a complex patient journey

Heavy bleeding at home	The family calls for a traditional birth attendant (TBA)	The TBA asks the family to call a midwife	The family goes to a midwife and the midwife arrives	Midwife refers the patient to the nearest health centre	The patient is seen at the health centre, but then is referred to a hospital
The patient is admitted via the emergency unit	Taken to the labour room, blood is needed and is scheduled for a surgery	Surgery is conducted	After recovery, then sent back to the obstetrics ward	Condition gets worse and patient passes away	Mortuary room

Microsystems in any health care organizations have both clinical and business aims, linked processes and a shared information environment, and they produce performance outcomes. The clinical aims involves care processes that will finally result in clinical outcomes as expected by the patients and providers. Patients nowadays put a high value on a good clinical outcome. Clinical outcomes and consequently, financial outcomes are the key performance indicators for any hospital and the health care industry as a whole. Satisfactory achievement of clinical outcomes will lead to attainment of business aims and survival of the organization in the long run. Both clinical and financial outcomes are thus determined by the performance of a microsystem level. These complex adaptive system must be organized to meet the values of patients and health care professionals.

Studies conducted in 20 high-performing clinical units reveal nine success characteristics for managing clinical microsystems. These characters are grouped into four interrelated factors (Nelson, 2002):

- People: patient focus, staff focus, interdependence of care team
- Information: information and information technology
- Performance and improvement: process improvement and performance pattern; and
- Leading organization: clinical microsystem ladership, culture and organizational support

Detailed description of these nine characteristics is beyond the scope of this text. Those who intend to explore this should take advantage of the following website: www.clinicalmicrosystem.org. The following section describe the framework and activities for managing clinical microsystems in order to achieve best clinical care.

B.   Clinical governance

The concept of clinical governance was first introduced by Department of Health in UK (UK National Health Service) in 1997 as a new strategy to achieve A First Class Service. Clinical governance was defined as "a framework through which NHS organizations are accountable for continuously improving the quality of their services, and safeguarding high standards of care by creating an environment in which clinIcal care will

flourish" (Department of Health, 1998). Through the clinical governance framework, all organizations providing clinical care must ensure adequate mechanisms or processes to monitor and improve clinical performance to achieve the best care for all patients everywhere in a cost-effective way.

To implement the framework, there are three main elements in clinical governance (Department of Health, 1998):

1. National quality standards, applicable for any health care organization (e.g. hospitals, primary care, private practice) in delivering care. The standards and guidelines are produced, based on evidence (evidence-based guidance) and disseminated by a dedicated body at the national level;

2. Mechanisms to safeguard high standards of clinical care, such as ensuring life-long learning and appropriate professional regulations, in order to create a conducive atmosphere for clinical quality improvement; and

3. Effective systems to monitor the implementation, such as benchmarking of clinical indicators and a performance assessment system.

With the aim to achieve clinical excellence, implementation of clinical governance at the health facility level can be developed in four pillars below:

1. Consumer value

2. Clinical performance and evaluation

3. Clinical risk management

4. Professional development and management

These are the pillars to ensure that the framework is put into practice. For each component, the following questions can be used to further guide monitoring and assessment of the current situation and improved practices as the result of its implementation. The questions are:

- Does the process exist? Is it clear?

- Can the process be monitored?

- Is there any reporting system?

- What recommendations are made for improvement?

- Is there any monitoring system for the follow-up actions?

- Does it bring about expected improvements?

Consumer value has been addressed in previous chapter. The following narratives describe the three other pillars in clinical governance.

1. Clinical performance and evaluation

Entering a hospital lobby, its motto is clearly displayed for the customers. In large print it is written: "Trusted partner for your health". How do we demonstrate that the hospital is trustworthy? In other words, on what basis should a hospital demonstrate their accountability to the public? Referring to the patient perspective and clinical governance framework, health care organizations should be held accountable for improving quality of clinical care delivered to the patients. In simple terms, its accountability is primarily assessed through clinical performance. (Unfortunately, information on clinical performance is rarely accessible to the patients).

Discrepancies between what the hospitals communicate to the customers and their actual performance are commonly found. Currently, our belief that the hospital is a safe environment for patients has changed towards an understanding that hospitals are a risk intensive industry. Knowledge on incidents of adverse events has become more available; a review of 2,405 sentinnel events across the USA occuring between 1995-2004 revealed 370 patients suicided in hospital, 308 patients had complications due to surgery, 296 patients experiencing wrong-sided surgery (JCAHO, 2004). Another example is of a specialist Asian chest hospital which is supposed to deliver high standard of clinical care for lung diseases. Results from clinical audit showed a high proportion of TB cases diagnosed without smear examinations and a low treatment success rate for TB patients treated in this hospital (Utarini, 2007). Again, this highlights the fact that unless a systematic evaluation is carried out, things tend to look better than they are.

Evaluation of clinical performance can be carried out using different approaches, namely clinical audit, clinical indicators, verbal autopsy, facility-based review and confidential enquiries. A brief description of each approach is summarized below. The first two approaches (i.e. clinical audit

and clinical indicators) are further elaborated as these are widely used in monitoring and evaluating clinical quality.

Verbal autopsy (VA). VA is a community-based death review based on an interview with family members of the deceased or neighbours. Generally, it can be used to provide information on the medical as well as non-medical causes of death, especially if many deaths occur outside health facilities. In the literature, VA has been made widely available in malaria control programs, examining child mortality, maternal death, and to provide additional information to facility-based death reviews.

In the field of maternal health for example, VA for maternal deaths is a method of finding out the medical causes of death and ascertaining the personal, family or community factors that may have contributed to the death in women who died outside of a medical facility. The VA consists of interviewing people who are knowledgeable about the events leading to the death, such as family members, neighbours and traditional birth attendants (WHO, 2004). The main purposes of a VA in this situation are to:

- Identify deaths that have occurred in pregnant or recently delivered women.

- Provide broad categories of causes of maternal death.

- Understand the factors that may have contributed to the deaths.

- Describe the background characteristics of women who died from maternal causes, such as age, parity, education and other social variables.

- Offer a tool to be used by national, provincial or district health offices to foster action to remove obstacles to high-quality obstetric care for all pregnant women.

Facility-based death review. Facility-based death review is a qualitative, in-depth investigation of the causes of and circumstances surrounding deaths occurring at health facilities. Deaths are initially identified at the facility level but such reviews are also concerned with identifying the combination of factors at the facility and in the community that contributed to the death, and which ones were avoidable (WHO, 2004).

Confidential enquiries. According to WHO (2004), confidential enquiries are systematic multi-disciplinary anonymous investigations of all (or a

representative sample of) maternal deaths occurring at an area, regional (state) or national level. It is widely used in reviewing maternal death to identify the numbers, causes and avoidable or remediable factors associated with them. Confidential enquiries provide evidence of where the main problems in overcoming maternal mortality lie, and an analysis of what can be done in practical terms. As a result, the information gained is linked to key priority areas requiring recommendations for the health sector (at policy as well as operational level) and community action.

Clinical audit (CA). CA is a well-established method of reviewing clinical practice against agreed standards with the aim of identifying areas for improvement in quality of care. The NHS in United Kingdom has defined CA as "The systematic critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome and quality of life for the patient" (Swage, 2000; Wright & Hill, 2003). In simpler terms, CA means checking whether what the health professionals think they are doing is what is actually happening, learning from it and changing their practices. When applied effectively, its benefit goes beyond improving the level of clinical care. The process of CA reflects the learning culture in health professionals (as opposed to blaming each other), enables improvement in clinical team work and collaboration, stimulates peer reviews and clinical behavioural change, better efficiency in using resources of hospitals and patients, and higher compliance to existing regulations affecting hospitals and health professionals (such as the medical practice law in Indonesia).

Clinical indicators. Clinical indicators are quantitative measures to indicate clinical processes and outcomes. These indicators do not directly measure level of quality of clinical services, instead they serve as flags or early warning system to potential problems requiring improvements. Further investigations are then carried out to improve clinical performance. Clinical indicators can be used to indicate clinical performance at both hospital and service area levels. Examples of hospital-wide clinical indicators are re-admission, healthcare-associated infection, decubitus ulcers, while service area indicators are specific clinical indicators according to services provided (emergency medicine indicators, pediatric indicators, surgery indicators, day procedure indicators etc.). These indicators may be collected based on sentinel event (for rare conditions) or rate-based

indicators (for frequently observed conditions). They can also be taken from currently existing indicators, new indicators based on available data, or new indicators based on a new data set. When agreed clinical indicators are measured across health facilities in a given area, the information can be used for benchmarking and made accessible to the community. Regardless of the indicators selected, any initatives to develop clinical indicators will not be useful unless they are linked to quality improvement.

2.   Clinical audit

For any professionals, the term "audit" generally gives a negative impression at first glance. It is perceived to be closely identical to finding mistakes, blaming and punishing individuals or organizations. A similar perception is still found among medical doctors and health professionals at large. To gradually minimize the fear, understanding the technical implementation of clinical audit is the first stage.

In regards to health care, CA aims to improve the quality of local patient care and clinical outcomes through peer-led review of practice against evidence-based standards and the implementation of change where subsequently indicated (UBHT Clinical Centra Office, 2005)[4] . As part of quality assurance, CA is built upon two main principles, i.e. a commitment to do better and an acceptance of the concept of best practice or evidence-based practice by the clinicians. Clinicians are therefore the main stakeholder in CA as they themselves specify the optimal management of conditions and agree toward implementation of best practice (Graham, 2009).

CA asks the questions – "are we following best practice?" and "what is happening to patients as a result?" Unlike financial audit, clinical audit is thus a peer-review mechanism led by the peers, applying objective explicit criteria derived from evidence-based standard. The emphasis is not searching error, but continuing professional development through reflection on current practice. The spirit of CA is professionally driven mainly from within the organization, and the process is adopting the learning organization culture to achieve better care for the patients.

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4   UBHT Clinical Audit Central Office. What is clinical audit? United Kingdom: National Health Service, University of Bristol Hospital Trust; 2005.

CA can be carried out retrospectively and concurrently or prospectively. Retrospective CA is looking backwards to discover what has happened in the past, while concurrent or prospective CA focuses at current situation at the time what care is delivered to the patients. The following paragraphs describe briefly the stages in conducting CA.

The methods of CA described in this book is taken from the National Institute of Clinical Excellence in United Kingdom (NICE, 2002). CA involves a cyclical process in five stages (Figure X), i.e. starting from preparing an audit, selecting criteria, measuring performance, making improvements and sustaining improvement. Actual improvement and its sustainability are embedded in the stages, therefore, it is clearly not a punishing tool for individuals.

Figure 20. Stages in clinical audit (NICE, 2002)

| STAGE ONE
Preparing for Audit |
| STAGE TWO
Selecting criteria |
| STAGE THREE
Measuring performance |
| STAGE FOUR
Making Improvements |
| STAGE ONE
Sustaining Improvement |

Using the methods   Creating the environment
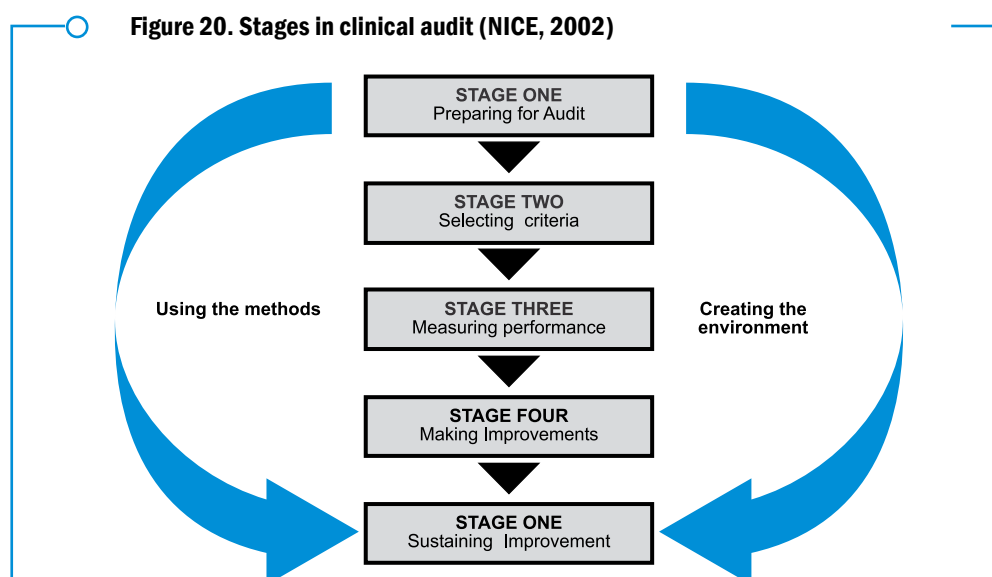
Stage one: Preparing for audit.

To implement CA, understanding the technicality as well as creating the right atmosphere is equally important. Both are addressed in this first stage of CA. Preparing for audit has five key elements:

- Involving the users
- Selecting the topic
- Defining the purpose
- Providing the structures
- Identifying and developing the skills

User involvement may take various forms, from merely collecting data from the users (through patient satisfaction survey, patient exit interview, complaints, letters etc.) to actual collaboration during the CA stages (such as in selecting topics that are highly relevant from the patient perspective, designing patient cards, hospital policy etc.). Selecting the priority topic for CA is an important start for a successful CA. Different sources of information available within and outside the hospital may be utilized for this purpose. These are clinical performance data, clinical indicators, minimum service standard indicators for hospitals, hospital current initiatives and other service data. External initiatives and data are useful sources to be considered. Priorities in the country/region, new standards endorsed by the professionals are examples of external sources. When the hospital never conducted CA before, selecting a topic relevant to those that are enthusiastics in improving clinical practice may be a strategic choice.

Topics and the purpose of CA may encompass a comprehensive case management or a more specific topics focusing on certain aspects in care processes. Examples of CA topics and purposes in maternal health related areas are:

- To assess the quality of care provided to woman undergoing induced abortion in England and Wales (Thomas et al., 2003)
- To improve the quality of clinical care for women with severe pre-eclampsia (Weeks, 2005)
- To evaluate indications, classification and lack of necessity of cesarean section (van Dillen et al., 2008)
- To audit intrapartum fetal and early neonatal deaths of infants weighing >2000 grams in a regional hospital in Tanzania (Mbaruku et al., 2009)
- To assess documentation of partograph and its influence on decision making at the University College Hospital, Ibadan (Fawole & Fadare, 2007).

Stage two: Selecting criteria.

The criteria form the tool by which the quality of care is measured. Criteria here refer to an attribute of structure, process or outcome that is used to draw an inference about quality. They can be implicit or explicit criteria

(see Donabedian, 2003) [5]. Implicit criteria are those relying on expert judgement, while explicit criteria are agreed criteria based on objective measures derived from the standard. This stage begins with defining the criteria (structure, process or outcome) and developing valid criteria. The criteria are best if based on evidence, and classified as those that must be done, should be done and cannot be done from the perspective of their impact on outcome. For clinical audit activities, criteria that fall into must be done and cannot be done are mostly relevant. Wagarachchi et al. (2001) describes criteria for optimal management of obstetric complications. As an illustration, the criteria for obstetric haemorrhage are the following:

- Intravenous access should be achieved
- Crystalloids and/or colloids should be infused until cross-matched blood is available
- Patient's hematocrit of hemoglobin should be established
- Typing and cross-matching of blood should be performed
- Coagulation tests should be performed if indicated (clotting time, bleeding time, platelet count)
- Clinical monitoring to detect early deterioration should be done at least quarter hourly for 2 hours (pulse, blood pressure)
- Urine output should be measured hourly
- Oxytosis should be used in the treatment of primary postpartum hemorrhage

Stage three: measuring performance

Having identified topics and explicit criteria, stage three encompassess the actual data collection. It consists of planning the data, identifying users, sampling users and finally, handling data. In planning data collection, a clear description of the patient groups, health professionals involved in delivering care to the patient groups and the time period must be defined. For example, in a clinical audit aimed to evaluate the diagnosis and treatment of TB in hospitals implementing DOTS strategy in Indonesia (Utarini & Djasri, 2008), the patient group is defined as all adult TB patients classified in the ICD X code A15-A19 treated at the hospital within the period of March-May 2006. Inclusion and exclusion criteria of the patient group population are defined and in most occasions samples are drawn.

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5   Donabedian A. An Introduction to quality assurance in health care. Oxford: Oxford University Press; 2003.

Detailed list of data collected, data collection forms, analysis are carried out in this stage. Before actual data collection, pilot study is useful to anticipate problems and to see if it works! For the clinical audit team, the most important attitude especially in a retrospective audit is that if it is not recorded, than it is considered not practiced. Therefore, this will also raise awareness for health professionals on the importance of having a complete medical record.

The final result is written to enable comparison between the criteria and the results. For illustration purpose, referring to the International Standard for TB Care standard 2, it is stated "all patients (adults, adolescents, and children) suspected of having pulmonary tuberculosis should have at least **two sputum specimens** obtained for microscopic examination". The result of this criterion in a CA conducted at eight hospitals in Indonesia is expressed below as the proportion of deficiencies in meeting this criterion. Both extremes were found. Hospital number eight nearly never carries out two sputum specimen examination, while hospital number six adopts this practice almost routinely (Utarini & Djasri, 2007).

Figure 21. Proportion of deficiencies in sputum smear examination in
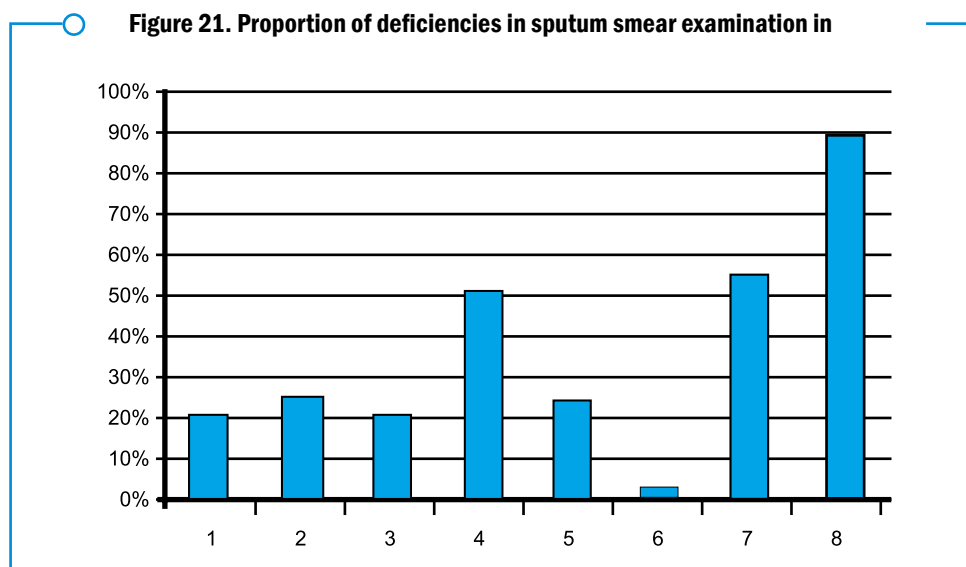
Stage four: making improvements

This stage is most critical in CA to demonstrate actual changes and make concrete improvements in care delivery. Clinical behaviour changes may occur at individual, group or organizational level. To introduce changes

effectively, identifying barriers to change and making detailed but practical plans in implementation are needed. The plan described what needs to be changed, what actions will be carried out, who needs to take actions, and time period for the actions to be effective. Creativity, good team work and the right atmosphere in the organization and external environment also determine successful implementation of this change and its sustainability. The changes may involve series of multifaceted interventions, effective dissemination of educational materials, new procedures written and endorsed, as well as monitoring and evaluation of the improvements.

For instance, during CA in TB case management conducted at Persahabatan and Bethesda hospitals in Indonesia (Djasri and Utarini, 2008), critical pathway was chosen to be the main intervention. Plans are made to develop the pathway, create the forms, disseminate to other health professionals involved and to obtain hospital endorsement before implementation. Following implementation of critical pathway, a clinical audit was conducted once more to evaluate the improvements, i.e. difference of compliance before and after critical pathway implementation. As an illustration, in Bethesda hospital in Yogyakarta province, non-compliance for anamnesis of TB treatment history reduced from 73 to 3%, history taking of HIV risk factors decreased from 95 to 36% and two sputum specimen examination for diagnosis also decreased from 27 to 3% (Djasri and Utarini, 2008).

Stage five: sustaining improvement

Any improvements made as follow-up actions in CA must be monitored, evaluated, maintained and reinforced within the hospital. Different approaches may be useful for monitoring and evaluation, such as repeating stage 3 (measuring performance), selecting relevant clinical indicators or patient safety indicators. In addition to monitoring and evaluating clinical improvements, the CA program itself also deserves monitoring and evaluation. A check-list can be used to assess how well is each CA stage implemented. To sustain and reinforce the improvements, integration of CA activities to the larger quality improvement systems in the hospitals is central. For CA to have a long-last impact, quality leadership, information technology, appropriate strategy, structures and cultures are key interdependent processes contributing to its success.

3. Clinical risk management

From a clinical perspective, patient safety implies ensuring safety in the overall process of care and managing potential risks caused by the health care system (hence, excluding risks caused by the patient factors). Patients entering the hospital already have inherent risks (such as severity of diseases, complications etc.), therefore, hospitals should make their best effort to minimize additional risks caused by the system. Examples of such risk are waiting time in emergency unit, inappropriate laboratory tests, illegible prescriptions, irrational use of drugs, healthcare-associated infections, decubitus ulcers, and many others.

The concept of risk management is adopted from business industries. In health care, this concept has only recently been discussed, in parallel with the introduction of patient safety global initiatives. Risks can be attributed to patients and to the services they receive. As patients are admitted to a hospital, they already have inherent risks related to their clinical conditions, but the risks may become greater during the care delivery processes. Any clinical actions (may it be diagnosis work-up, medications, surgery or other interventions) pose a certain risk to the patients. Health-care associated infections, phlebitis, decubitus ulcers and adverse drug events are among the well-known risks in health care. Use of sophisticated technology, such as in the operating theatre or ICU unit further increase the possibilities of higher risks. Therefore, efforts to minimize these risks should be part of clinical guidelines or procedures.

Examples of risk management practices can be borrowed from other settings. In public places, when using the elevator we often come accross to a signboard stating "In case of fire, please use the stairs. Don't use the lift". In the aviation industry, regardless of how frequently we are on board, information on risk management procedures is routinely announced to the passengers before take-off. Furthermore, for passengers sitting in the emergency seats, additional information is given to seek the willingness of these passengers to assist the crew in case of emergency. (Think about the analogues in hospital service industry. Do hospitals give more information to, for example, pregnant woman with certain cardiac problems before undertaking cesarean section delivery? Do hospitals give more information to pregnant woman with previous cesarean section delivery before assisting a normal labor for that woman?). Also, in every hotel

room, a signboard showing which direction to go in case of fire is available behind every door.

For hospitals, our understanding of risks associated with any medical procedures and interventions should encourage further understanding and application of clinical risk management activities, particularly for high-risk procedures. JCAHO (2005) identifies the following as potentially high-risk processes:

- Medication management
- Blood and blood product use
- The use of restraints
- The seclusion of patients as part of care
- Behavior management and treatment
- Operative and other invasive procedures
- Resuscitation and its outcomes

There are two approaches in risk management activities: reactive or proactive approaches. Reactive or retrospective analysis is used to analyse the causes after adverse event incident occurs (actual event), and proactive approaches seek to anticipate potential weaknesses (hypothetical situation) in order to prevent systems-related failures. As a result, in the retrospective analysis, we commonly ask "What happened?", while for the prospective approach, we pose the question "What could possibly go wrong?". Both tools are important in the efforts to improve clinical performance.

Root cause analysis (RCA) is a tool developed for retrospective analysis and the process is carried out after a sentinel event or near miss has occurred. The purpose of RCA is to identify the underlying causes of any variation in performance which can produce adverse events. Its application is especially useful in high-risk prone industries such as health care in which zero defects are unlikely. Failure mode and effect analysis (FMEA) is a tool applied primarily for proactive risk reduction and its use is independent of adverse event incidents. Both RCA and FMEA have similar characteristics in regards to non-statistiscal methods of analysis, reduction of possible harm to the patients, and identification of underlying conditions leading to harm (JCAHO, 2005).

The following steps illustrate the main steps involved in RCA:

1. Investigate events: define the problem, collect evidence, conduct interview, examine the setting where events occurred, identify underlying factors, describe chain of event

2. Reconstruct events: identify actions taking place prior to adverse event or near miss, conduct problem tree analysis to identify the root problem

3. Analyse causes: identify and state the root causes

4. Develop action plans: determine appropriate and agreed actions, develop a detailed plan and obtain commitment from the leaders

5. Report RCA process and findings: document RCA process and tools applied, cost, summary of event description, investigation and analysis process and findings.

These steps reflect the main principle in conducting RCA, i.e. to focus on the system in order to identify opportunities to improve the systems to prevent from reoccurring of adverse events. The focus is not to blame any individuals nor to focus on individual accountability for poor performance. Based on the main steps above, different leading organizations develop detailed steps in conducting RCA. For illustration, JCAHO develops 21 steps from organizing the team up to communicating the results from RCA (JCAHO, 2005).

For illustrating the use of RCA, Fernandes et al. (1996) use RCA to identify the root causes of laboratory delays in providing results to the emergency department. The current process of laboratory utilization by the emergency department was mapped. The extent of unnecessary laboratory delays were calculated by measuring the current process against the standard. After confirming the problem of laboratory delays to the emergency department, the RCA reveals the following factors as root causes and actions were taken to remove the factors: laboratory assistants availability, recollection rate, volume of tests for emergency department admitted patients, and order processing time.

Another example is taken from the work of Mills et al. (2005) in analysing the results of 176 RCAs conducted in 97 Veteran Health Administration facilities in US to reduce falls and related injuries. The root causes found

for falls and injuries related to falls involved problems with policies or procedures (44%), communication problems (23%), the need for more training (16%), environmental causes (13%) and fatigue or scheduling problems (4%). Three specific categories for the reported root cases are staff needs more training (16%), the need for a specific intervention for a specific patient populations (14.4%) and the need to improve the current system for falls assessment (14.2%). Of the 745 actions identified, the actions mostly involved changes or improvements in policy (40.4%), specific changes in patient care (32.4%) and staff or patient education (27.2%). The most effective interventions to reduce fall and related injuries are actions which focused on clinical change, conducting environmental assessments and implementing toileting interventions.

Various institutions develop different steps in Failure mode and effect analysis (FMEA). In principle, FMEA analyses high-risk procedures critically, identifies potential failure modes in the current procedures, assesses the effects of the failure modes, then prioritizes the failure modes in order to redesign, implement and monitor the new procedures. In this book, we refer to the eight key steps developed by JCAHO (2005) below. Prior to applying the steps, the general advice is to obtain organizational commitment from the high-level leaders in order to mobilize the resources for this activity and remove barriers in the implementation of recommendations produced from FMEA activity. The steps are:

1. Select a high-risk process and assemble a team
2. Diagram the process
3. Brainstorm potential failure modes and determine the effects of the failure modes
4. Prioritize failure modes
5. Identify root causes of failure modes
6. Redesign the process
7. Analyze and test the new process
8. Implement and monitor the redesigned process

The following example shows the result from steps 2-6. For each process, failure modes, causes, and effects are determined and the team rankes on a rating from 1-10 the probability of occurrence (occ) of the failure mode or effect, detectability (det) of the failure modes, and severity (sev) of its affect. Risk priority number is calculated as multiplying the ratings of occ,

det and sev and this reflects the priority failure modes. the and is taken from the Institute of Healthcare Improvement (IHI) website (IHI, 2009). The aim in this example is to achieve 100% compliance with accurately labelling blood specimens. Readers who wish to have detailed information on RCA and FMEA may visit www.ihi.org or others.

Table 10. Example of failure mode and effect analysis

Failure mode	Causes	Effects	Occ	Det	Sev	RPN	Actions
Step 1. Unit nursing staff label the specimens at time and location of the collection							
Staff do not take the labels into the room with them	Staff practice	Potential for inaccurate lab results, potential for inaccurate treatment	7	7	8	392	Labels may only be printed immediately before collection, taken into patients room
Date, time and initials are not written on the specimen label	Staff practice	Potential for inaccurate lab results, hemolysis	4	2	3	24	Double check with another staff member prior to sending to lab. Put signage in the tube cannisters to remind staff.
Labelling does not occur at the bedside, specimens are sent to the lab without labels, with missing information, or wrong patient label	Staff practice	Potential for inacurrate lab results and/or treatment	7	7	8	392	Labels must be printed off immediately prior to collection of specimen, and taken to bedside during collection
Step 2. ED staff properly labels blood specimens and retains at patient location							
ED staff does not write the label, or does not complete the label	Staff practice	Potential for inaccurate results and/or treatment, re-stick of patient	5	4	8	160	Specimens must be labelled at the time of collection with all necessary components
Step 3. Specimens will be drawn on different vein, extremity or below an IV site							
Staff draw blood in same vein as IV fluid infusing	Staff practice	Potential for inaccurate (diluted) lab results, potential for inaccurate treatment, need to re-stick the patient	5	3	5	75	Staff must draw blood in extremity or vein other than the IV placement or turn off the IV fluid for at least 3 minutes prior to drawing the specimen

Box 12. Practice exercise for clinical risk management

As part of the hospital quality improvement program, the director intends to apply clinical risk management. Two examples below can be used as exercise to conduct the steps in RCA or FMEA. Select the tool you want to use for the exercise and use the tool in relation to the given situation above. In conducting the exercise, the current situation in your hospital can be used as the basis in the discussion.

Exercise 1. Results from a 3-month survey in the inpatient units show the following:

- 20% of prescriptions need to be cross-checked with the prescribers due to illegible hand writing
- 25% of prescriptions contain potential adverse drug interactions
- Five events of drugs were given to wrong patients
- 70% of patients admitted did not receive information on how to take the drugs

Exercise 2. The following data are obtained from a district hospital located in an area with a high mortality rate in Indonesia. In year 2008, the total number of deliveries was 1,074 or on average 3 deliveries per day. Out of those, 238 (22.2%) had cesarean sections and during discharge surgical site infection was identified in 104 cases (36.2% of cesarean sections).

C. Quality improvement

Box 13. Process variation in care delivery

Findings from a rapid survey in 18 public hospitals in West and East Nusa Tenggara provinces of Indonesia showed that the proportion of cesarean section out of total deliveries varied between 4% to 56%. Bearing in mind that the highest accepted range is 20% with higher proportion in teaching or referral hospitals, there is a large gap between what is expected in the clinical performance and what is the reality. Likewise, response time for true emergency cases varied from 2-17 minutes despite the standard cut-off point of 5 minutes response time to be examined by the physician, as stated in the Ministry of Health minimum service standard indicator.

The paragraph above illustrates the problem of process variation in care delivery. It may occur to any patients seeking care at different health care facilities, i.e. in a simple primary care setting up to a top referral hospital, in any hospitals located in any countries. When the variation occurs, it triggers further questions, such as: Is this a normal variation or is there a problem? How can we improve this situation? How can we minimize the variations in order to move forward to achieving high-standards in quality of clinical care?

In previous sections, the clinical governance framework is described to emphasize accountability, (the outcome), continuous quality improvement (the process), supported by high quality standard of care and the right atmosphere (the input). Hospital accountability is discussed primarily in the context of outcome, i.e. clinical performance, to reflect patient needs and expectations. Continuous quality improvement indicates the process required by any health care organization to manage, achieve and sustain quality, given the appropriate inputs of available high quality standard and a positive atmosphere. This section is devoted to quality and quality management.

1.　　Definition of quality and quality dimensions

Quality can be defined in different ways. It can be defined in a generic way, such as "Doing the right thing, at the right time, in the right way, for the right person, and having the best possible results" (AHRQ, 2009). Alternatively it can also be defined according to the context for assessment. Donabedian (2003) suggests an approach to define quality based on what components of quality are most pertinent at successively more inclusive levels. In his approach, quality can be defined in the context of care by practitioners and other providers, care implemented by patient and care received by community. In each level, different ways of defining quality may be used. For illustration, the Joint Comission described quality in the context of care received by community. It is defined as "the degree to which patient care services increase the probability of desired outcome and reduce the probability of undesired outcomes given the current state of knowledge" (Fromberg, 1986 in Katz & Green, 1997).

Regardless of different perceptions that people have when describing quality, generally the notion of quality gives positive values and attributes toward a service or a product. A service is regarded as high quality when it has certain attributes (or dimensions in quality). The most common used quality dimensions include (in descending order of frequency): effectiveness, efficiency, access, safety, equity, appropriateness, timeliness, acceptability, patient responsiveness or patient-centredness, satisfaction, health improvement and continuity of care (Quigley et al, 2008). These dimensions are, however, neither comprehensive nor mutually exclusive. The definitions of the dimensions are given below (Quigley et al., 2008, AHRQ, 2009; National Institute of Public Health, 2003, IOM, 2001).

Table 11. Quality dimensions and their definitions

Quality dimension	Definitions of the dimension
Effectiveness	The degree to which the care/intervention is provided in the correct manner, given the current state of knowledge, in order to achieve the desired/projected outcome(s) for the patient
Efficiency	The ratio of the outcomes (results of care/intervention) for a patient to the resources used to deliver the care
Accessibility	The feature of the services which are to be availed of by the population, i.e. those which facilitate their use by overcoming geographical, psychological, cultural and economical barriers
Safety	Freedom from accidental or preventable injuries produced by medical care.
Equity	Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location and socioeonomic status
Appropriateness	A feature of the services provided or actions proposed by the health service, which corresponds to the needs of the population
Timeliness	The degree to which the care/intervention is provided to the patient at the time it is most beneficial or necessary
Acceptability	The extent to which care is delivered humanely and considerately
Patient-centredness	Consideration of individual patients' and society's preferences and values in delivering care
Satisfaction	Service or care delivered in a manner which meets or exceeds the patients' expectation
Health improvement	Improvement of the patient's health
Continuity of care	Connectedness between the stages along the patient pathway

These dimensions may be given different emphasis by different organizations and stakeholders involved in hospital service. Patients and communities at large are concerned with effectiveness (of care), efficiency (of patient resources), accessibility, timeliness, acceptability, equitability, patient-centredness, and satisfaction. For health professionals, the following key dimensions of quality are given more emphasis: effectiveness (of care), safety, timeliness, effectiveness and acceptability. While for those in charge of managing the hospital, efficient use of resources, accessibility of services, satisfaction and equitability may be of higher importance.

Over a relatively short period, the paradigm for understanding of quality in health care has shifted, i.e. from service excellence, clinical excellence to recently, patient safety. The changes can be illustrated using restaurant as an analogue. How do you select a good restaurant? What characterizes a good restaurant? In the service excellence paradigm, a good restaurant is judged from the perspective of how good is the restaurant in delivering the service

to the customers. The customers may consider the following characters, such as convenience, timeliness, cleanliness, accessibility, international relationship, cost and so forth. In the later paradigm (clinical excellence), these characteristics may be becoming less important to the customers unless the food tastes good. After all, this should be the main reason why people choose a particular restaurant. The patient safety paradigm even puts a higher demand to the restaurant, i.e. not only that the food tastes well, but after having the food, there is no unpleasant experiences to the customers (such as diarrhoea, stomach discomfort, feeling of nausea, vomiting etc). This phenomenon also occurs in hospital setting.

In health care, service excellence connotes excellence in the services received by the patients. Service excellence connotes excellence in the services received and perceived by the patients and care takers. Patients are satisfied under the conditions that services are delivered timely, health professionals treat them with caring attitude, services are delivered in a comfortable setting etc. The shift in emphasis from service excellence to clinical excellence emphasizes that clinical care is the core business of any health care organizations. In this era, accountability of hospitals is assessed through their clinical performance, applying many clinical indicators. Patients are satisfied if their clinical conditions are perceived to be improved. The latest paradigm (patient safety) reflects that patient demand toward health care facilities increases at a faster speed than it can be accommodated by the hospital service industries. Patient demands regarding health care facilities is increasing at a faster rate than can be accommodated by hospital service industries. Not only is satisfactory clinical outcome is expected by the patients, but also a high standard of clinical care delivered with minimum risks is called for. Patient safety initiatives have been put forward as a global movement. This implies that hospital and other health facilities must be safe first for the patients and services are then delivered with high quality. Unless it is safe, service quality becomes less pertinent for the patients.

Understanding of the above paradigm shifts may lead to different ways to operationalize quality dimensions for measuring level of quality. Quality dimensions may be measured differently depending on the paradigms. For measuring service excellence, it is sufficient to measure timeliness in terms of waiting time. A hospital could measure for example the average time

spent from patient registration up to examination by the medical doctor in the outpatient units. The same quality dimension may be used as a clinical indicator to indicate excellence in clinical services. For example by defining timeliness in the context of 'arrival-to-intervention' when giving oxygen, bronchodilators and corticosteroids to patients with status asthmaticus in the emergency unit. Finally, time lag from antibiotic prophylaxis given up to start of incision for patients undergoing surgery may be used as part of clinical risk management to enhance patient safety.

2.   Standard and standard development

The main challenge for those who are engaged in hospital or health care services in general is to reduce variations. These variations may occur in almost all activities taken place in hospital, may it be clinical, supporting or managerial activities. To give an example, a study on hospitalized adult new smear positive TB in a national referral hospital for respiratory diseases in Indonesia reviewed 100 cases admitted in 2006. The findings show a variation in length of stay between 2-34 days with the variation in total cost ranging from 239,386.42 to 4,036,478.50 IDR (Kusdiandi, 2009).

To be able to reduce variations (or rather, to reduce variations to an acceptable range), standardization is essential in hospital services. In fact, many questions asked by different stakeholders are related to standardization. Patients often question: "how many days do I have to spend in the hospital for a caesarean section and how much would it cost?". Health professionals ask: "what is the standard procedure for diagnosing TB? Is the nosocomial infection rate in this hospital high?" Managers often express their concerns: "when should old equipment be replaced with newer models" or "how much is the unit cost for major operations?" Policy makers are concerned with comparing maternal mortality rates among provinces and question if the rates are acceptable. In other occasions, they may require the standard for building a C-class hospital. All these questions require answers that are related to the term standard.

Standards can be defined in different ways. For the users, the term 'standard' is most commonly associated with a certain figure illustrating a degree of excellence, acceptable variations or even minimum requirements

that are useful for comparison, benchmark and preventive purposes. Some examples of the definitions are:

- A specified quantitative measure of magnitude or frequency that specifies what is good or less so (Donabedian, 2003). For example, a standard for the staffing of an intensive care unit could be: not less than one registered nurse per two occupied beds. Another example would be a standard for acceptable range of cesarean sections, i.e. 15% of total deliveries.
- A benchmark of achievement which is based on a desired level of excellence (WHO)
- Any established measure of extent, quantity, quality, or value; an agreed-upon or expected level of performance (Meissenheimer, 1997)

Other definitions of standards refer to a descriptive statement of the expected conditions. An example of this is the definition of a standard by Katz and Green (1997), i.e. a written statement that specifies expectations. In general, a standard statement describes the expected level of quality. It expresses what is to be achieved, the level of achievement and the requirements to be met in order to be judged "good quality". An example of a standard statement is taken from a recent standard called the International Standard for TB Care (ISTC) which as launched in year 2006 (Tuberculosis Coalition for Technical Assistance, 2006). The standards are grouped into three parts, namely diagnosis, treatment and public health responsibilities. In diagnosing TB, examples of standard statements are as follows:

- Standard 1. All persons with otherwise unexplained productive couth lasting two-three weeks or more should be evaluated for tuberculosis.
- Standard 2. All patients (adults, adolescents, and children who are capable of producing sputum) suspected of having pulmonary tuberculosis should have at least two, and preferably three, sputum specimens obtained for microscopic examination. When possible, at least one early morning specimen should be obtained.

With reference to the above standard two of ISTC, the standard specifies what is to be achieved (i.e. standardized diagnosis process), the level of achievement (i.e. for all patients), and requirements to be met (i.e. at least two sputum specimens for microscopic examination).

Different types of standards exist in health care. The most well-known classification of standards in the clinical practice setting was developed by Donabedian (2003). It consists of structure, process and outcome standards. Structure is meant to designate the conditions under which care is provided. This include material resources, human resources and organizational characteristics. Process refers to activities that constitute health care, carried out by both professional personnel, patients and their care takers. Process includes diagnosis, treatment, rehabilitation, prevention, patient education, etc. Outcome demonstrates the changes (desirable or undesirable) in individuals and populations that can be attributed to health care. Changes may occur in terms of changes in health status, knowledge gained by patients and care takers, behaviour of patients or care takes and satisfaction of patients and care takers with the care received and its outcomes (Donabedian, 2003). Currently, the application of this S-P-O model goes far beyond clinical practice. It may well be applied to assess quality of a health program, a service or even used at organizational level.

Based on the purpose and intended level of achievements, standards can be classified into optimum standards, achievable standards and minimum standards. Optimum standards indicate optimum level of achievement, while achievable standards illustrate the best level to be achieved. On the other spectrum, minimum standards refer to the lowest level in which a hospitals or a service will be labelled providing substandard service if falls below the minimum standard. Minimum standards are normally mandatory, and it consists of mainly standards of structure. On the other hand, optimum standards are commonly voluntary and outcome-orientated.

Figure 22. Minimum and optimum standards
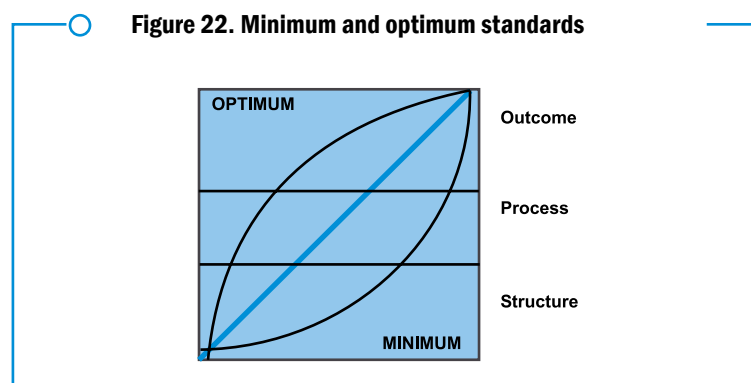
Types of standards may also be differentiated according to intended audience who should apply the standard and the level of context. These are individuals (professionals, patients), services, the hospital and the health system. At the individual level, standards exist to assist both the patients and healthcare professionals. For the patients, standards and guidelines are available to improve patients and care takers' understanding of care processes. They normally contain information related to the illness, important steps and decisions to be made at certain times, treatment options, specific procedures or interventions, possible risks and complications, and actions needed. Standards for health professionals exist in the form of standard of competence. Each profession has its own standard of competence, reflecting the minimum competence required by the professionals. An example would be the competence standard for physician, nurse-midwive and allied health professionals.

At the service level, standards, guidelines, pathways are developed to ensure high standards in delivering care. Numerous standards and guidelines have been developed for specific conditions, diseases or groups of diseases. The examples are ISTC (disease-oriented), guidelines for Integrated Management of Childhood Illnesses (group of diseases) and standards for obstetrics emergency care (conditions) and so forth. In addition to clinical conditions, standards also exist for particular services, such as the nutrition service standard, emergency service standard, pharmacy service standard etc. These standards are also developed, adopted or endorsed in Indonesia.

At the institutional level, hospital standards are standards applicable to the context of the hospital in general. The purposes vary, from qualifying hospitals that provide highly specialized services (such as cancer hospital), demonstrating a higher capacity to provide much larger category of services (such as for upgrading from class-C to a higher class-B hospital), improving certain management functions (e.g. financial standards for hospitals), up to receiving a certain status (baby and friendly hospital, international hospital, teaching hospital, Public service enterprise or BLU hospital).

Finally, at the environment level, existing standards are available for the purpose of regulatory activities. These are standards for licensing, certification and accreditation. Rooney and Ostenberg (1999) defines these regulatory activities as the following. Licensure is a process by which

a governmental authority grants permission to an individual practitioner or health care organization to operate or to engage in an occupation or profession. The purpose is to ensure that an organization or individual meets minimum standards to protect public health and safety. Licensure to individuals is usually granted after some form of examination or proof of education and may be renewed periodically through payment of a fee and/or proof of continuing education or professional competence. Organizational licensure is granted following an on-site inspection to determine if minimum health and safety standards have been met. Accreditation is a formal process by which a recognized body, usually a non-governmental organization (NGO), assesses and recognizes that a health care organization meets applicable pre-determined and published standards. Accreditation standards are usually regarded as optimal and achievable, and are designed to encourage continuous improvement efforts within accredited organizations. An accreditation decision about a specific health care organization is made following a periodic on-site evaluation by a team of peer reviewers, typically conducted every two to three years. Accreditation is often a voluntary process in which organizations choose to participate, rather than one required by law and regulation. Certification is a process by which an authorized body, either a governmental or non-governmental organization, evaluates and recognizes either an individual or an organization as meeting pre-determined requirements or criteria. Although the terms accreditation and certification are often used interchangeably, accreditation usually applies only to organizations, while certification may apply to individuals, as well as to organizations. When applied to individual practitioners, certification usually implies that the individual has received additional education and training, and demonstrated competence in a specialty area beyond the minimum requirements set for licensure. When applied to an organization, or part of an organization, such as the laboratory, certification usually implies that the organization has additional services, technology, or capacity beyond those found in similar organizations.

Figure 23. Application of standards for different level of context

Environment level-Regulatory standards

Organizational level-Hospital standards

Service level-Service standards

Individual level-Patient & Professional standards
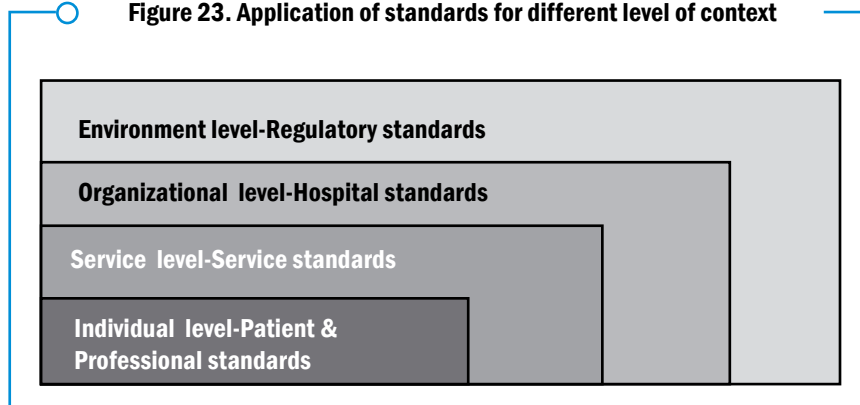
Katz and Green (1997) differentiates standards in health care practices into three domains based on the focus: service, practice and governance. Service domain focuses on the service and is related to the end users of the service, i.e. the patients mostly and in some units, non-patients. The focus of the practice domain is on the staff, including physician. Every staff or professional has its own practices. For example a laboratory practice, a housekeeping practice, and so forth. Finally, governance domain focuses on the governance and management of the service or organization. It deals with every manager, supervisor, chief, head or director in the organization. For every domain, it has structure, process and outcome standards.

Standards may also be categorized into how they should be implemented by the health care organizations. A standard is mandatory to be fulfilled if it is a minimum standard required for a certain service or health facilities. For example, hospital licensing standard is a mandatory standard for any hospitals, regardless of ownership (public or private hospitals). Those that donot qualify the standards may not operate as a hospital. Competence standard for physician or other health professionals is another example. Only those who pass the licensing examination are allowed to practice the profession. Voluntary standards also exist and most commonly these standards are optimum standards focusing on process and outcome. For example, in many countries, participation in hospital accreditation is voluntary. Hospitals who intend to pursue higher quality standards may opt to take part in an accreditation scheme.

Other classifications of standards are based on who develops the standards, either internally by the organization itself or externally. Hospitals may

develop their own standards by adopting existing standards developed by external organizations. For example, the service standards for the management of TB cases in a hospital can be developed by referring to existing external standards, such as the national TB program guidelines and ISTC.

Table 12. Summary of different types of standards

Approach to assessment	Level of achievements	Level of context	Focus	Implementation	Development process
Structure Process Outcome	Optimum Achieveable Minimum	Individual Service Hospital Environment	Service Practice Governance	Mandatory Voluntary	Internal External

The process of developing standards involves five basic steps (Koentjoro, 2007). These are identification of needs and scope of standards, development, implementation, evaluation and updating of standards.

Identification of needs and scope of standards should take advantage of available data on current practices and achievement, process variations, and practical problems. To prioritize what needs to be standardized, Katz and Green (1997) suggests four criteria, i.e. high risk processes, high volume, high cost and problem prone. Other criteria may be added, such as perceived importance by the customers, or potential intervention exists. Different sources of information may be used. Based on understanding of the problem, a multidisciplinary team is formed representing relevant stakeholders, both internal and external customers. This team is the responsible to define the scope and user of the standards, state the expected level of achievements, review literatures to search for the current best available evidence, review similar standards developed elsewhere and draft the standards. After sufficient consultation to experts and potential users, the standards should be first piloted and revised accordingly.

Standards must be **SMART**:

■ specific
■ measureable
■ appropriate
■ reliable
■ timely

The main challenge in standardization is in the dissemination and implementation of the standards. Very often, initiatives on standardization ends at the stage when the standard is written. Standards are published, but their dissemination to reach the target audiences and implementation are rarely given the same attention. Therefore, the task of the team should also cover the selection of effective strategies for dissemination and implementation. During this phase, barriers and supports to implementation should be recognized and anticipated.

In general, not all health professionals have positive attitudes and behaviours toward standards. It is common for physicians to have doubts on the use of standards. For instance, standards are perceived to be useful only for certain circumstances, such as for junior residents, for common or uncomplicated clinical conditions, for poor patients, for TB patients who use program drugs and so forth. Reducing variations through standardization is often seen as "limiting" professional freedom instead of "pursuing" excellence in clinical care. Many also feel that standards are "rules" for others to measure "us". There may be fears that those who do not comply to the standards are to be removed from the system and may be exposed to legal processes. These negative perceptions toward standards lead to reluctance of health professionals in using the term standard. Instead, the term guideline is more acceptable for the professionals and is frequently used to replace standard. Moreover, guidelines (as in clinical guidelines) is perceived to be "softer" than standards.

Taking into considerations the complexity of standard dissemination and implementation, the inclusion of clinical leaders in the team is critical. Effective educational strategies applying interactive communication and participative approaches to reach the targetted users should be well-planned in advance. Likewise, development of tools and procedures needs to be done to encourage application of standards in daily practice. Those who are eager to change must be accommodated and the system should create an atmosphere whereby change is rewarded. For standards focusing on administrative or managerial activities, standard operational procedures are written and revised by the organization in order to put the standard into practice.

A similar initiative in clinical practice is the development of clinical guidelines and clinical/critical pathway (may it be multidisciplinary across health professionals, named integrated clinical pathway; or focusing for one profession or clinical pathway). Integrated care pathways are structured multidisciplinary care plans, which detail essential steps in the care of patients with a specific clinical problem, and describe the expected progress of the patients (Campbell et al., 1998). Essentially, they map out two embodied routes: the sequencing and timing of practitioners' care and the journey that patients will experience (Hunter and Segrott, 2008).

Below is an example of a postnatal pathway indicating both the timeline and actions needed, developed in Scotland, United Kingdom (NHS, 2009). The pathway has a colour code to indicate the level of care needed, i.e. midwive-led care (green), further assessment or referral to the appropriate facilities (amber), and maternity team care led by obstetrician (red). For further description on this pathway for maternity care, please visit www. nhshealthquality.org.

Figure 24. Post-natal pathway (NHS, 2009)

Time Line	Mother			Baby		
	Green (see note 1)	Amber (see note 14)	Red (see note 15)	Green (see note 16)	Amber (see note 17)	Red (see note 17)
Every contact	Postnatal exam as per SWHMR Ask about: + Physical and emotional health and well-being + Coping strategies and support + Experience of common health problems Discuss vaginal loss, healing of perineum, headache symptoms Give information on: + Promoting health + Recognizing common health problem + Managing fatigue with diet, exercise, and planning activities + Encouraging partner involvement Update postnatal care plan	For women with same physical, emotional, social or educational needs, seek further advice or refer to appropriate care	For women with complex physical, emotional, social or educational needs, follow locally agreed referral route	Baby exam as per SWHMR Ask about: + The baby's health + Breastfeeding; document any support needed in postnatal care plan Provide advice and support on infant feeding Assess emotional attachment Give information on: + Promoting the baby's health + Recognizing common health problem + The baby's social capabilities + Local support Update baby care plan	Encourage the woman to contact you if her baby is jaundiced, the jaundice is getting worse or her baby is passing pale stools (see note 17)	+ Be alert to signs of domestic abuse or child abuse, if concerned follow local child protection policy + Check Maternity Summary Record for any previous alerts

Figure 24. Post-natal pathway (NHS, 2009), continued

Time Line	Mother			Baby		
	Green (see note 1)	**Amber (see note 14)**	**Red (see note 15)**	**Green (see note 16)**	**Amber (see note 17)**	**Red (see note 17)**
Within first 24 hours	Physical: + Be aware of signs & symptoms of life threatening conditions + Take & record blood pressure and document first urine void (within first 6 hours) + Take & record pulse, temperature, respiratory rate + Revise thrombosis risk Emotional + Give information on mental health well-being (see note 16) + Discuss coping strategies/ support (complete SWHMR 'feeling confident' sheet and 'your questions/concerns" sheet) + Encourage gentle mobilization Feeding support: + Offer ongoing feeding support & advice + Observe one full feed if breastfeeding	If not voided urine within first 6h, refer to local guidance	Life threatening conditions: + sudden or profuse blood loss + offensive/ excessive vaginal loss, tender abdomen or fever + severe/ persistent headache + diastolic BP >90mmHg and systolic >160 mmHg and accompanied by another sign/symptom of pre-eclampsia + shortness of breath or chest pain + unilateral calf pain, redness or swelling	Adhere to the 10 steps to successful breastfeeding Confirm and document urine & meconium passed within first 24 hours Give information on: + bathing (cleansing agents, lotions and medicated wipes are not recommended + keeping umbilical cord clean and dry + formula feeding as required Give hearing screening advice and complete a hearing screen within 4-5 weeks		
From Day 2	Physical: + Take & record pulse ,BP, temperature, respiratory rate for first 3 days + Ask about bladder and bowels (within 3 days) + Check rhesus status, offer anti-D if required (within 3 days) + Offer MMR to sero-negative women + Give perineal /wound hygiene advice + Offer other blood tests/ hemoglobin if required + Give pelvis flocr/other exercise information Emotional: + Assess mental health wellbeing (note 160 + Give information on normal patterns of emotional changes + Ensure SWHMR 'feeling confident with your baby' sheet complete and signed off + Discuss SWHMR "thinking about your pregnancy, labor and birth' sheet	When relevant, seek further advice or refer to appropriate care	When relevant, follow agreed referral route	**Conduct full neonatal examination ideally within 72 h (refer to NHSQIS examination) of the newborn best Practice Statement 2008)** **Review the health history of the family, woman and baby and address any parental concerns** **Give cot death/bed sharing advice (note 19)** **Give information on newborn screening test** **Day 5-7:** **+ Weigh breast fed babies** **+ Weigh formula fed babies if concerns** **+ Perform newborn blood spot test (Complete SWHMR consent form)**	10-1296 weight loss in breast-fed babies should trigger specialist breast-feeding advice	1096 weight loss in formula fed babies / >12,5% fro breast-fed babies should trigger referral to pediatrician

Figure 24. Post-natal pathway (NHS, 2009), continued

Time Line	Mother			Baby		
	Green (see note 1)	Amber (see note 14)	Red (see note 15)	Green (see note 16)	Amber (see note 17)	Red (see note 17)
From Day 2	Feeding support + Ensure SWHMR "feeding your baby' sheet complete and signed off Discuss: + Resumption of sexual intercourse + Resolution of baby blues (within 10-14 days) + Safety issues and provide relevant education to family Give information on + Common health problems + Sexual health/contraception, including contact details for expert advice + Local peer, statuary and voluntary groups At the end of the postnatal period, the coordinating health care professional should review the woman's physical, emotional and social well-being, screening and medical history should also be taken into account Complete SWHMR "Discharge from Midwifery Case" sheet Handover to Public Health Nurse/Health Visitor	Mothers who need more breastfeeding support, refer to support available		**Promote parent/ mother-baby attachment** **Encourage social networks** **Complete SWHMR "Discharge of baby from Midwifery Case" sheet** **Handover to Public Health Nurse or Health Visitor**		

3. Quality measurement

How well does your hospital perform? Is your hospital safe for the patients? How is the quality of antenatal care in your hospital? How satisfied are your patients to the services they receive at your hospital? How convenient is this waiting room? Regardless of the answers, these questions require some measurements to produce data necessary to show the evidence and give answers.

The motivation for measuring quality is ample. Quality measurement can be carried out for varying reasons as follows:

1. To determine opportunities for quality improvement
2. To monitor and evaluate quality improvement activities
3. To compare performance across physicians, services or departments

4. To obtain trends over the period of time
5. To comply with the regulations, insurance scheme, public authorities
6. To give rewards to high performing services or departments
7. As a baseline for further interventions
8. For research purposes

Todate, efforts to measure quality are made simpler with explicit standards. Furthermore, standards are also nowadays accompanied by indicators to measure compliance toward implementation of the standards. For example, in the standard on birth and emergency preparedness in antenatal care which is part of the standard for maternal and neonatal care, the standard statement is written:

All pregnant women should have a written plan for birth and for dealing with unexpected adverse events, such as complications or emergencies, that may occur during pregnancy, childbirth or the immediate postnatal period, and should discuss and review this plan with a skilled attendant of each antenatal assessment and at least one month prior to the expected date of birth.

For this standard statement, the indicators for input, process, output and outcome are already specified as the following:

Input indicators:

- The proportion of pregnant women receiving antenatal care
- The proportion of pregnant women with a birth and emergency plan
- The proportion of communities where leaders, traditional birth attendants, etc. are promoting birth and emergency plans for pregnant women

Process and output indicators:

- The proportion of pregnant women and of community members with knowledge of danger signs
- A nationally or locally adapted card exists and is used for developing a birth and emergency plan
- Supporting educational materials for developing a birth and emergency plan are available and are in use

Outcome indicators:

- The proportion of births at which a skilled attendant is present
- The proportion of births at which a birth companion, designated by the woman, is present
- The proportion of women who recently have birth whose delivery took place where planned
- Transport is available to referral facilities

Another supporting factor to quality measurement is the worldwide initiatives to develop and implement different types of indicators. Kazandjian (1995) broadly defines indicator as an observation expected to indicate a certain aspect of performance. If this is applied to monitor quality (i.e. quality indicator), the indicators will then indicate quality.

Another common term used in the literature on indicator is clinical indicator. Clinical indicators are indicators to indicate the clinical management and outcome of care. Rather than giving definite answers, clinical indicators serve as a 'flag' or to 'draw attention' to indicate potential clinical problems that needs to be addressed further or simply, opportunities for improvement. More recently, patient safety indicators have begun to be developed and published.

As a result, different indicators such as quality indicators, clinical indicators, patient safety indicators, performance indicators, currently exist. Different organizations have also developed a set of indicators as a companion. For illustration, since 2001 the Organization for Economic Development Cooperation (OECD) Health Care Quality Indicators Project developed 17 indicators that reflect a robust picture of health care quality that can be reliably reported across the 23 countries involved in this initiative (Kelley and Hurst, 2006). Similarly, the WHO Regional Office for Europe, with its 52 individual member states, has developed a Performance Assessment Tool for quality improvement in Hospital (PATH). This framework contains of six performance dimensions, i.e. clinical effectiveness, patient centredness, efficiency, safety, staff orientation and responsive governance and produces 24 core performance indicators and 27 tailored set of indicators (Veillard et al., 2005). The Australian Council for Healthcare Services in Australia has published a set of 23 clinical indicators for monitoring for hospital accreditation. On patient safety indicators, the Agency for Healthcare Research in Quality (AHRQ, 2003) in USA has produced a guide to patient

safety indicators (PSI) consisting of 20 PSI for hospital-level indicators and 6 PSI for area-level indicators.

The Indonesian Ministry of Health has also embarked on similar initiatives by producing guidelines on clinical quality indicators (WHO and MOH, 2001) and hospital performance indicators (MOH, 2005). The clinical quality indicators are grouped into 4 categories (namely non-surgical services, surgical services, maternal and child health, and additional indicators) and they consist of in total 20 indicators. For example, the indicators for maternal and child health services are:

- Maternal death due to eclampsia
- Maternal death due to haemorrhage
- Maternal death due to sepsis
- Prolonged length of stay for maternal delivery
- Death rate in less than 2000gr newborn
- Proportion of deliveries resulting in cesarean section

While for the hospital performance indicators, 12 indicators have been developed to measure internal business processes, learning and growth, customer satisfaction and financial performance. These indicators are then incorporated into the minimum service standard indicators for hospital. Examples of service quality indicators used for measuring internal business processes are:

- Waiting time for emergency cases
- Completeness of medical record
- Maternal death due to eclampsia
- Maternal death due to sepsis
- Waiting time for elective surgery
- Nosocomial infection

The availability of the different types of hospital indicators described above certainly facilitate those who wish to measure their performance. Hospitals do not necessarily have to develop their own indicators, as the most suitable indicators can be selected from existing lists, provided they are able to be accessed given current data availability, data quality, recording and reporting indicators, and their own system requirements.

Once the system for measuring indicators is in place, it is important to bear in mind that undertaking quality measurement itself doesnot automatically

lead to quality improvement. In fact, quality measurements alone may not lead to any improvements unless the following conditions are present:

1. Activity in quality measurement is part of larger efforts to improve quality
2. Commitment for quality improvement exists
3. Indicators are chosen selectively, measured, analyzed and used for improvement
4. Resources are devoted not only for measuring quality, but more importantly for quality improvement.

Quality measurement must be carried out with quality improvement in mind. Consequently, although there are ample indicators that can be measured in hospitals, the recommended approach to start measuring quality is through applying an incremental approach, i.e. initiating measurements for selected services or for a particular focus and then enlarging further if resources permit. It is more critical to demonstrate the linkage between quality measurement and improvement, in order to give confidence to the hospital team that actual services for the patients can be improved.

There are three major processes in quality measurement (Bouchet, not dated): (1) Decide what information is needed; (2) Collect the data; and (3) Analyse and use the results. The three steps are further described below.

Stage One. Decide what information is needed

Stage one consists of five steps. These are:

- Select health service(s) to be measured
- Describe the process of care
- Draw a systems view of the service(s)
- Make the critical standards explicit
- Develop indicators

What do we want to measure? Hospitals provide a large number of services. Due to resource limitations, often it is not possible to conduct quality measurements for all services at once. Consequently, those services or managerial functions that are important for supporting clinical services need to be prioritized first. Prioritization may be carried out taking several factors into consideration, such as:

- priority health problems in the region (high maternal mortality rates, high endemicity for malaria)

- possibility to prevent further morbidities or complications (immunization, family planning, cardiovascular services)
- availability of cost-effective interventions (TB, ARV treatment, integrated maternal and child initiatives)
- high-risk services (emergency services, operating theatre, blood transfusion, chemotherapy)
- high-volume services (acute respiratory infection)
- high-cost (surgery, cesarean section)
- areas or services prone to problems

In addition to the above factors, certain quality dimensions may be given higher priority than others. Many countries have stated the priority quality dimensions in their quality framework. For example, the quality framework of WHO Regional Office for Europe (PATH project) gives high emphasis on clinical effectiveness, patient-centredness, efficiency, safety, staff orientation and responsive governance (Veillard et al., 2005), while the IOM (2001) prioritizes effectiveness, efficiency, safety, equity, timeliness, respect, patient-centredness and continuity. Implicitly, in the Indonesian National Health System, the following quality dimensions are stated as the core principles in delivering health services to the population: continuity, comprehensiveness, safety, appropriateness, equity, accessibility, and team-based (Ministry of Health, 2009).

After selecting the service(s) or function(s), care processes are described to illustrate current practices and determine critical activities. In this step, a flow-chart can be a useful tool to outline the processes, identify critical decisions and locate barriers in delivering care (refer to quality tools for an example of a flow-chart).

Applying the structure, process and outcome standards in Donabedian, a systems view of the services can be further described. This step enables one to understand interrelations between all components necessary for delivering the service. Generally, any services would require drug and logistics supply, finance, clinical support system, supervision, information system, referral system and so forth. The following illustration is drawn for provision of TB services in hospitals.

Table 13. Application of structure, process and outcome in TB control program

Structure	Process	Outcome
Trained staff	Commitment	Treatment success rate
DOTS team	Adherence to standard	Default rate
DOTS unit	Laboratory error rate	
National TB program guideline	Conversion rates	
	Case holding process	

Once the process for TB services is outlined, explicit standards are sought. Explicit standards may be derived from existing standards (e.g. national TB program guidelines, ISTC etc.) or as agreed by those involved in providing TB services in a particular hospital. Finally, indicators are developed to either measure to what extent are the desirable occurrences achieved or to measure the undesireable occurrences.

Measurement of indicators can be classified according to types of occurrences, i.e. sentinel events and rate-based indicators (Katz and Green 1997; Kazandjian, 1995). Sentinel events are negative and unexpected occurrences. Because they rarely occur, sentinel events have to be expressed in such a way that they will describe single occurrences. The fatal (or potentially fatal) consequences of these events for patients means that organizations cannot allow any tolerance for sentinel events - each event must trigger further investigation immediately upon occurence. Examples of sentinel events are: administration of incompatible blood, sponges left in the abdomen post-surgery, amputating the wrong body-part, maternal deaths, neonatal death, fall-incidents among newborns.

In contrast, rate-based indicators are process-oriented or based on the outcomes of events occuring more often, expressed in proportions or ratios of aggregated data from many events over a specific time period. Examples are the proportion of patients admitted for >2 weeks with decubitus ulcers out of the total number of patients admitted for >2 weeks; the number of patients who failed to receive education on high-risk pregnancy out of the number of patients undertaking antenatal care.

Stage Two: Collect the data

Stage two covers the preparation and actual data collection activities. Data collection methods and tools must be prepared before collecting the data. The most common data collection methods are: (a) direct observation; (b) patient exit interview; (c) provider interview; and (d) review of medical records. In general, combined methods are recommended taking into consideration the strengths and weaknesses from each method.

Direct observation is carried out during patient-provider interaction in the real setting. The interaction can be observed by a supervisor or a designated person trained to do the observation. Both the patient and provider may (overt observation) or may not be aware of (covert observation) the actual objective of the observation (which disease case management, which phase etc.), but they are aware of the general area of observation. A check-list can be used to facilitate the observation. The only weaknesses of this direct observation is related to the observer's presence, which may itself change the actual behaviour. However, this can be minimized once direct observation becomes part of the routine in supervision, in order to improve quality. Alternatively, the observation can be extended over a longer period of time, to lessen the effect of observers.

The patient exit interview focuses on information on the patient's current experience in receiving a service, before they leave the hospital/health facilities . A check-list can be developed to identify both the patient's satisfaction and confirm understanding around what's happening during the process of care as well as tasks performed by the providers. Alternatively, open-ended interview guidelines may also be used to explore patient experiences. Although some patients have limited capacity to understand what's happening and may be reluctant to express their actual feelings or perceptions, patient exit interview's are less prone to recall bias than interviews undertaken once patients have returned home.

Provider interviews are carried out to reveal how specific conditions are managed. Both a check-list format or open-ended guidelines may be applied in this type of interview. In this type of interview, some caution needs to be exercised when the provider tends to give a normative answer. Therefore, provider interviews provide a good opportunity to measure competence, or knowledge of the process, but not necessarily actual performance.

Observation or review of medical records will give more accurate picture of performance.

Review of medical records: Ideally, medical records should contain all information during care processes. In reality however, the format and completeness of medical records are problematic, leading to less accurate information being available in the medical records. The assumption that what is done is recorded, and what is not recorded is not done, may not reveal the reality. In this case, direct observation is a better method.

After deciding the methods for data collection, tools must be developed. Generally, a check-list format with close-ended questions, a questionnaire with close-ended or open-ended questions, or an open-ended interview guidelines are the most common data collection forms. The forms usually contain three parts, i.e. the administrative part (patient identity etc.), the technical part (the main information collected) and the coding system to make the analysis easier. Once developed, those who will use the form must be trained. The forms may be used by outsiders (supervisors, managers) or insiders (self-assessment or peer-review). The form is then piloted and revised accordingly. The review may cover the content, consistency of completing the forms, problems in using the format, the format and coding.

Finally, the actual data collection activities are in place. Decisions need to be taken in regards to how long and how often are data collected in order to be useful to serve its purposes. Sufficient information needs to be given to the providers or units prior to start of data collection.

Step Three: Use of the information

In order to be useful for feedback or decision making, data must be analyzed in a useful way and stored in an accessible format. Most importantly, the findings should be made useful for improving quality, instead of for justifying certain conditions. For illustration, findings from a satisfaction survey show that on average 80% of patients are satisfied with hospital services. This information may be used solely for the purpose of justifying performance to stakeholders (i.e. that most of the patients in this hospital are satisfied), and as a result, no further analyses are carried out. However, all information gathered from the data should be further analyzed for improving quality.

Further analysis should be carried out to reveal which services have the least or greatest need of improvement. Those with high performance could be encouraged to maintain the performance and to instill practices that lead to high performance for others to benchmark. Low performance implies a need for improvement that is greater, compared to other units. Efforts and resources may then be prioritized to those units. For this purpose, simple descriptive analyses using proportion, ratios, rates may be used as appropriate. The use of tables or graphs will promote further understanding of the need for improvement. It is, however, beyond this section to review the analysis and data presentation techniques.

4. Quality improvement

Quality improvement should be in the heart of medical professionals and all health professionals in general. The current knowledge on medical errors and the global campaign on patient safety have been alarming health care providers seriously. Yet, in the context of health care as a complex environment, Varkey et al. (2007) observe that physicians still rely primarily on paper tools, and their own memory and hard work to improve care for the patients. A supportive environment is, therefore, required to enable optimum care delivery and continuous quality improvement.

Historically, efforts to improve health care quality have relied on quality assurance and quality control. While these methods allow the system to identify the "bad apples" and recommend changes, it is not sufficient to affect the overall chain of processes necessary to produce better outcomes for the patient. Nowadays, the jargon of quality improvement is more often used to underline the importance of improvement and improved results. The term improvement generically implies a cyclical process of mapping current processes, defining standards, measuring against them and implementing change. This may occur from individual patient, group of diseases or conditions, unit or service level up to the organizational. Compared to the previous concepts of quality assurance and quality control, continuous quality improvement emphasizes the chain of processes and focuses on the system. Berwick's model of the chain of improvement describes the basic premise in continuous quality improvement as presenting an opportunity for improvement in every process on every occasion (Berwick, 2002). At the organizational level,

quality improvement connotes any process or tools that aims to reduce the quality gap in systemic and in organizational functions according to the dimensions of quality (Schneider & Stierle, 2007).

To achieve and improve quality, different quality improvement models or methodologies exist in health care. The most common QI methodologies applied in health care are PDSA (plan-do-study-act), six-sigma and lean strategies (Varkey et al., 2007). These three strategies use overlapping techniques, which typically include a cyclical approach in testing new ideas and redesigning the processes. In any of these models, a stepwise improvement with the intention to become "better" remains the core principle of quality improvement. This article further describes the PDSA cycle, as it is the most commonly used approach for rapid cycle improvement in health care. Different cycles also exist, such as the PDCA (plan-do-check-act) and FOCUS PDCA (Find a process to improve, Organize a team that knows the process, Clarify the current knowledge of the process, Understand the causes of process variation, Select the improvement) (NHS, 1995).

The PDSA cycle was initially developed by Nolan and colleagues as a framework for accelerating improvement in a variety of business contexts (Langley et al., 1996). Eventually this framework (called the Model for Improvement) was adopted in health care industries. The model identifies four key elements of successful process improvement: specific and measurable aims, measures of improvement that are tracked over time, key changes that will result in the desired improvement (the first part) and a series of testing "cycles" during which teams learn how to apply key change ideas to their own organizations (the second part) (IHI, 2009).

Figure 25. The model of improvement (Langley et al., 1996)
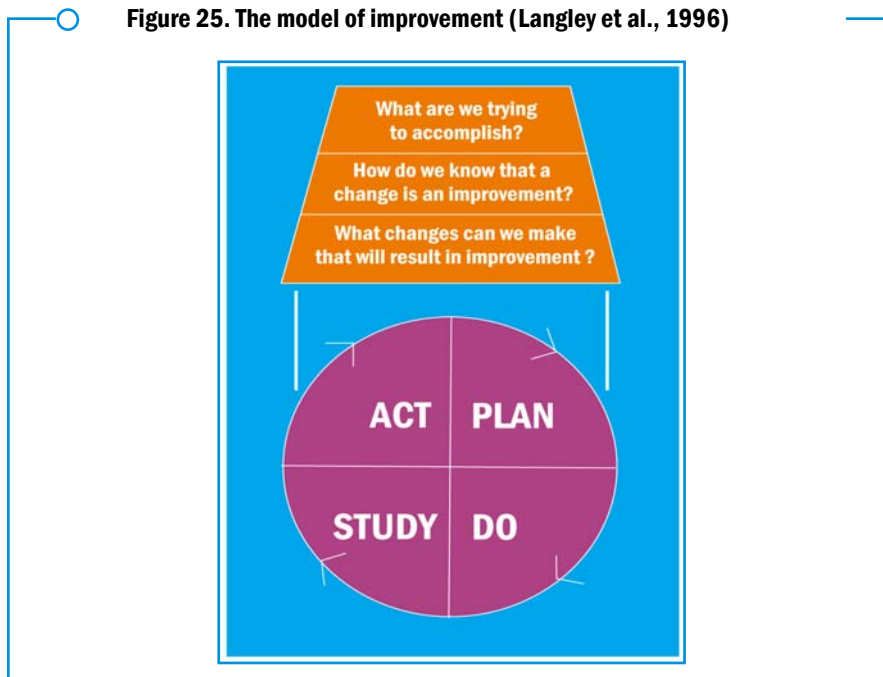
These two parts are of equally importance in quality improvement, i.e. what can we improve and how can we improve. The first part of reflects more of the thinking process to select the most appropriate interventions to improve quality. The process involves asking three fundamental questions:

- What are we trying to accomplish? (Aim)
- How will we know that a change is an improvement? (Measure), and finally
- What changes can we make that will result in improvement? (Cycle for learning and improvement)

The second part then describes the process to implement the intervention, applying the PDSA cycle. PDSA involves a trial and learning approach, tested using simple measurements to observe changes overtime. It consists of four steps in a logical sequence, carried out repetitively in small cycles. The small cycles represent the small changes, that if carried out successively, it will lead to larger and sustainable changes. In brief, PDSA is described as follows:

Table 14. Description of PDSA cycle

P (Plan)	Plan details of test	Objectives set, detailed planning of activities, and tasks are assigned with the team
D (Do)	Carry out the change	Implementation of the planned action and documentation of the process.
S (Study)	Gather data and observe	Documenting results from the test cycle and observations made.
A (Act)	Lessons learnt and continue	Identification of lessons learnt from the study phase and decisions made for continuation of the next test cycles

For illustration, we take one example of reducing cesarean section rates to describe the Model for Improvement. The aim is to reduce total cesarean section rate by 30% over a 12 month period without increases in adverse outcomes for mothers or infants. To measure whether a change indicates improvement, the following measures are collected: Total cesarean section rates, perinatal mortality, apgar scores and transfers to NICU. Changes are classified into 4 ramps, each ramp is broken down into smaller changes. One of the changes tested is to establish admission criteria for low-risk patients. The PDSA cycle is as follows:

Plan:

The objective is to establish admission criteria to reduce the number of low-risk patients in labor and delivery who are in false or latent labor. The details are:

(1) The team of labor and delivery nurses and physicians, with Chief of Obstetrics, draft criteria based on those used by other hospitals;
(2) Circulate criteria for who is at low risk and criteria for admission to all Obstetric medical and nursing staff for comment within 10 days. Include cover letter from Chief of Obstetrics.
(3) Hold a multidisciplinary meeting within 3 weeks to discuss changes in criteria and plan for implementation;
(4) Train two nurses within each shift to utilize the criteria and request dissemination at staff meeting in one week;
(5) Test use of the criteria for one week with the patients of selected physicians willing to participate;

(6) Assess impact of changes and revise the criteria. Measures: mean cervical dilation on admissions, exceptions taken to criteria and reasons, adverse events related to criteria.

Do:

After tested during one week, 10 patients were identified as being at low risk. On the midnight shift, the nursing staff did not realize that the criteria should be applied then as well and did not use them for the first three nights.

Study:

Of the patients admitted before the test, 5 of 7 (71%) had dilation less than 4 cm. After the test, only 3 of 9 (33%) were admitted prior to 4cm dilation. Nursing staff were fairly comfortable, but had trouble convincing two of the patients that it was safe to go home. The three physicians were very comfortable with the admission policy. There was still come confusion about who was at low risk. The test is working, but needs to adjust several areas before proceeding.

Act:

Continue using the criteria, revisit the low risk criteria and specify. Expand the test to other physicians who are willing to participate. Consider a triage area for patients who cannot go home but are not ready to be admitted. For the next cycle, establish triage area and revise criteria for low risk.

The strength of the PDSA approach is rooted in its ability to test changes on a small scale. By testing on a small scale, changes can be rapidly seen at small expense, and experiences and feedback quickly gained to improve the action. Staff are more likely to be responsive toward small scale changes. Furthermore, the PDSA cycle can be applied to conduct multiple change strategies through multiple improvement cycles, as shown in the above illustration. Each action can be tested on a small scale and move through repetitive cycles until the desired effect is accomplished. It may also have a snow-ball effect for the organization, resulting from greater confidence in the organization after small successful changes have taken

place. This then has the effect of stimulating others to initiate changes and even make larger scale organizational changes. In order to engage organizations further in making real, system-level changes, leading to dramatic improvements in care, the Institute of Healthcare Improvement (IHI) has introduced a collaborative breakthrough series. This has engaged content experts in specific clinical areas with quality improvement experts building upon the PDSA cycle over a period of 6-15 months.

5.   Quality tools for process improvement

Quality improvement is best conducted if data are systematically integrated into the process. To facilitate the identification and analysis of quality problems, the identification of quality targets and detailed planning for improvement, the following quality tools may be employed in various stages. The tools can be divided into non-statistical tools and statistical tools.

Table 15. Quality tools for process improvement

Non-statistical tools	Statistical tools
Brainstorming	Histogram
Flow-charts	Pareto charts
Cause and effect	Check-sheets
Critical incident technique	Run chart
Multiple voting	Control chart
Priority problem matrix	
Force-field analysis	

Brainstorming

Brainstorming is a group decision making technique designed to generate a large number of creative ideas in a short time through a dynamic but non-judgemental process. The steps and guidelines for brainstorming are the following:

1. A team (in this context, quality improvement team) is formed and a chair and secretary are appointed.

2. Make sure the team understands the objective and rules of brainstorming, and get them involved in defining an issue statement. An issue statement can be worded in question format, such as "What are the issues involved in implementing quality improvement in emergency services?"

3. Every member states one idea in turn but passes if they have no new ideas. Commonly, a group of 5-9 could generate 30-50 ideas.

4. The activity continues until all members are running out of ideas. Silence is expected but should not stop the brainstorming process unless all members pass.

5. While still generating ideas, no discussion or evaluation of ideas are allowed. Members are only allowed to ask for clarification of ideas at this stage.

6. At the end of brainstorming, ideas are discussed and similar ideas are grouped. The results can be used as the input for another tool, such as multiple voting and Ishikawa diagram.

The role of facilitators or the group leader is to encourage active participation of all members, develop high energy and enthusiasm in the atmosphere, expanding ideas of others, and record all ideas in a visible way for the group members.

Flow-charts

Flow-chart is a graphic sequence of all major and/or minor steps for a specific process. The purpose is to describe the major steps (macro diagram) and minor steps (micro diagram) completely, to identify who does what in the process, to locate critical stages and problem areas, and to indicate appropriate data collection points. If an ideal flow-chart is also developed, then it can be used to be compared with the actual process.

The steps are the following:

1. Identify the process. Define the start and finish points in the process examined. If macro and micro diagrams are constructed, then the macro diagram only contains major activities.

2. Describe the current process from beginning to end. Commonly, the following symbols are used in charting the process. However, these symbols need not to be a barrier in describing the process. The flow is more important than the symbols. Another chart representing the

ideal process may also be constructed.

3. Analyse the flow-chart to locate barriers and search for improvement opportunities. Some questions to trigger the analysis process are: Are the steps and activities complete? Are there unnecessary or overlapping activities? Where are the delays and barriers? Why is it different to the ideal flow-chart?

4. Update the chart with the new ones.

Symbols in the chart:

Table 16. Symbols

Symbols	Description
	Start or Stop
	Activity
	Decision to be made
	Document
	Delay/wait
	Connector

Below is an example of a micro diagram (Ovretveit, 2005):
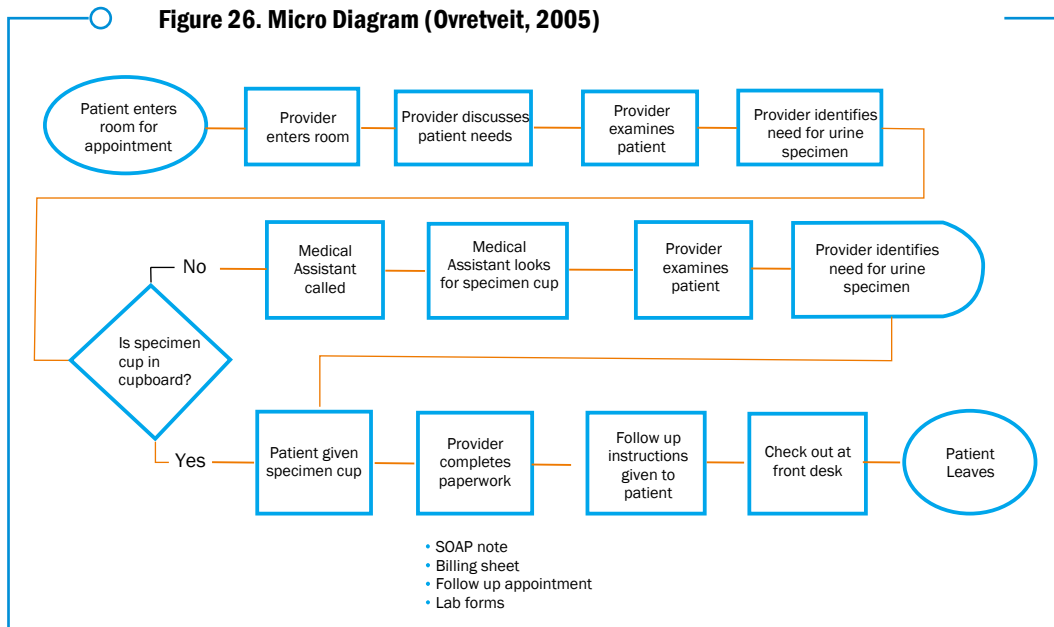
Figure 26. Micro Diagram (Ovretveit, 2005)

- SOAP note
- Billing sheet
- Follow up appointment
- Lab forms

Cause and effect

Cause and effect (or Ishikawa or Fishbone diagram) is a graphical presentation of exploring all factors that may influence or cause a given outcome. The purpose is to determine root causes of a given effect, to show the complexity of many causes affecting the effect, to identify source of variations or to identify areas that need further information. The factors may be pre-determined and classified according to 5-P (Policy, procedure, people, p) or 5-M (money, method, man, material, machine) and environment and others.

The steps are the following:

1. To write a problem statement that describes the effect. The statement could reflect the problem, or written positively to describe the intended objective. For example: long waiting time for true emergencies (problem statement) or timely complaint responses (objective)
2. Set major factors or categories as the fishbones (such as policies, procedures, people, methods, environment etc.) and brainstorm ideas to fill in the branches under appropriate categories
3. Identify all potential causes of variation. Cards or self-adhesive notes

can be used to rearrange the factors and sub-factors. Keep asking why to obtain the root causes.

4. Gather data to focus process improvement around a few yet vital causes.

5. Prioritize list of causes by developing criteria to be taken into considerations. Examples of criteria are resources needed, level of authority to decide, potential intervention exists and so forth. If necessary, use decision making tools to decide the priority.

Example of causes of length appointments (Ovretveit, 2005):

Figure 27: Fishbone Diagram
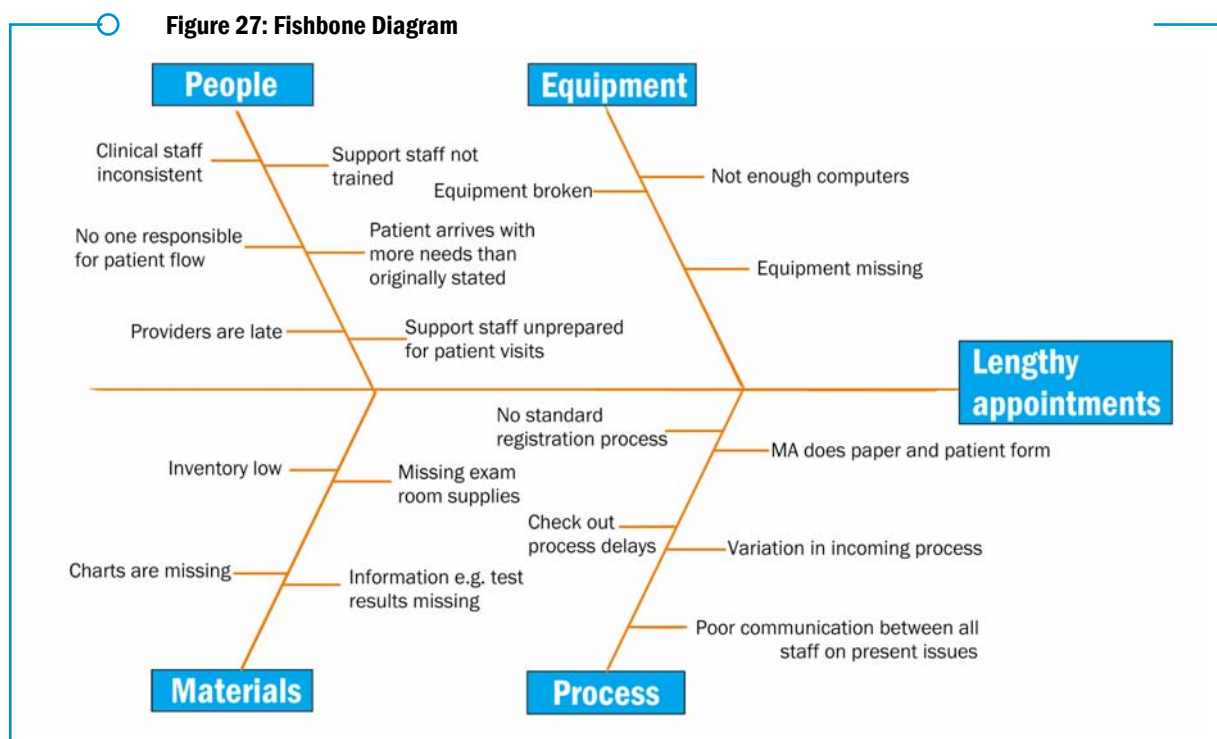
Critical incident technique

This is an interviewing technique with open-ended questions which elicits what patients and other users perceive as important during their experience of services. The questions are structured around the care process. Critical incident technique collect qualitative data and most often used for outpatient service. The purpose is to identify key problem areas where quality is poor, to priority areas to improve and to identify key quality characteristics. For example: patient perceptions of quality in outpatient services.

The steps are the following:

1. Identify the patient population to be interviewed (such as new patients visiting outpatient services)
2. Agree on the numbers and categories of patients to be interview
3. Ask a trained interviewer to interview the patients and to probe further to gather what their positive and negative experiences in receiving the service. Patients identify are kept confidential.
4. Collect information on exit or after the patient has almost completed the appointment in a comfortable venue
5. Identify the critical incidents and probe for reasons behind the problem or issue.

Rank-ordering

This is a group decision making technique to show individual and team rankings of ideas in order to determine priorities from all the ideas generated.

The steps are the following:

1. Agree on the criteria to develop rankings
2. Code each idea on the list with a letter
3. Individually, the team members list the letters in order and then indicate the rank of each idea by assigning numbers to each idea (1 for first choice, 2 for second choice, etc.)
4. Members take turn to state their ranking and these are recorded on a flip-chart
5. The team analyses the ranking by calculating the total for each idea (e.g. the lowest score indicates high priority; or, in terms of the proportion of members who allocate first choice for a particular idea)

Force-field analysis

Force-field analysis is a method for understanding competing forces (promoting and inhibiting forces) that increase or decrease the likelihood of successfully implementing change. The purpose is to provide a framework for strengthening the driving forces and limiting the barriers and to facilitate improvement opportunities.

The steps are the following:

1. Define the objectives or goal to be analyse, such as to give up smoking.
2. List the forces and classify into promoting or driving forces and hindering or inhibiting forces. Use ideas generating tools (e.g. brainstorming) to identify the forces.
3. Prioritize the forces according to their relative impact on the problem or goal.
4. Implement by minimizing the inhibiting forces and strengthen the promoting forces.

Example: To give up smoking

Figure 28. Force-field analysis: To Give up smoking

Promoting forces			Inhibiting forces
Better health	→	←	Habitual behaviour
Save money	→	←	Need for nicotine
Family won't be smokers	→	←	Need something to chew
Food will taste better	→	←	Weight gain when I stop

Pareto-chart

Pareto-chart, developed by Alfredo Pareto, is a bar chart to differentiate the 'vital few' from the 'useful many' with the 80:20 rule (20% of the cases have 80% of the impact). By separating the few major problems that cause the effect from the many possible causes, improvement efforts can be prioritized.

The steps are the following:

1. Identify the effect and possible causes. For example: why do pregnant women decide not to deliver the baby in health facilities?
2. Collect data relevant to causes
3. Create a table and order from largest to smallers.
4. Calculate the cumulative total for each cause and determine the cumulatative percent of total for each case

5. Create a graph with left vertical axis from 0 to just above the total. The right vertical axis should have markings from 0 to 100%.
6. Create a bar graph showing each cause on the horizontal axis and draw line graph representing the cumulative percent
7. Indicate cumulative percent associated with 'vital few' and look for a clear break point in the slope.

Example (Ovretveit, 2005):

Figure 29. Pareto Chart

n=120
1-31 May '98
RHO
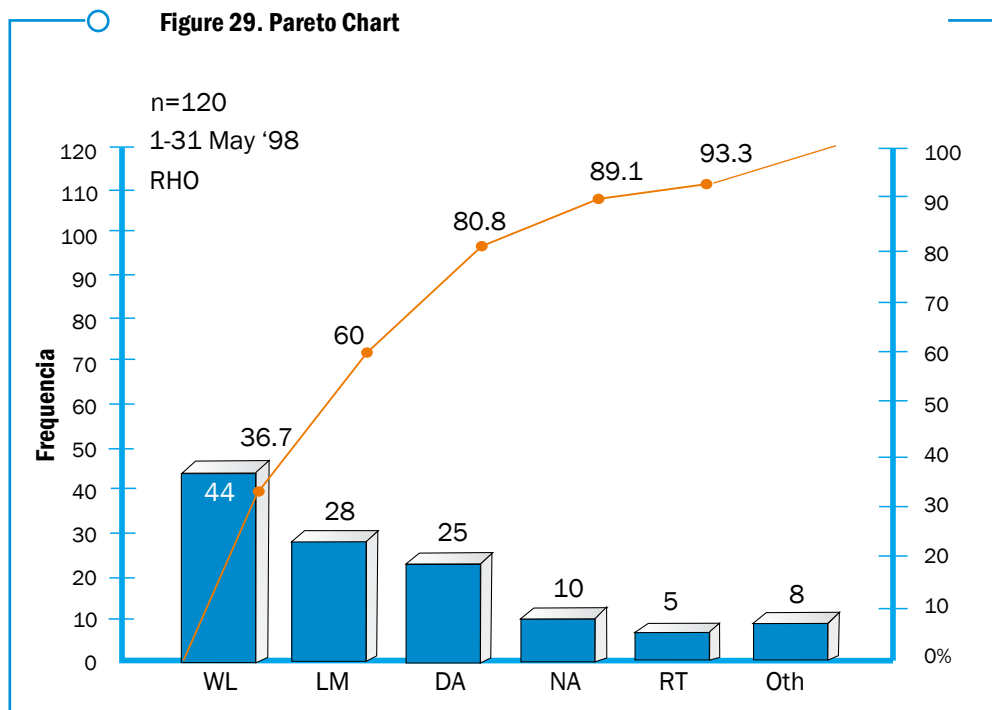
Check-sheet

A check-sheet is a simple form which can be used to calculate the occurrence of a certain problem or condition observed. The raw data resulting from the check-sheet can later be transformed into appropriate graphical presentation.

The steps are the following:

1. State clearly what is being observed and labelled accordingly.
2. Keep the data collection process as simple as possible.
3. Group the data in a meaningful way to enhance their use
4. Convert the raw data to a valuable format, easy for others to understand

Example of check-sheet of errors in patient care (Ovretveit, 2005):

Figure 30. Check-Sheet Errors in Patient Care (Ovretveit, 2005)

Errors in	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Sum
Medication	////	////	//	///	////	///	///	24
Quantity	/		///	//		///		9
Drug selection	///	/		///	///	/		11
Patient Identification			////		///			4
Procedures	///							6
Methods		////	////	///		///	/	15
Time and date	/	/			/			3
Others			////			/		5
Sum	13	10	17	11	11	11	4	77

Histogram

Histograms can be used to summarize data and show the frequency with which particular value or ranges of value occur. Histograms do not show variations according to time, unlike run-charts or control-charts, but show the distribution of a process.

The steps are the following:

1. Determine the type of data (variables) you want to measure and collect (e.g. waiting time)
2. Collect the data using appropriate measurements units of that variable (e.g. time, measured in minutes)
3. Count the total number of points you have collected and determine the number of class intervals required.
4. Determine the range and the interval width.
5. Plot the data. Remember that each data point appears in one interval only.

Example of a histogram of complaints from patients (Ovretveit, 2005):

Figure 31. Histogram of complaints from patients (Ovretveit, 2005)
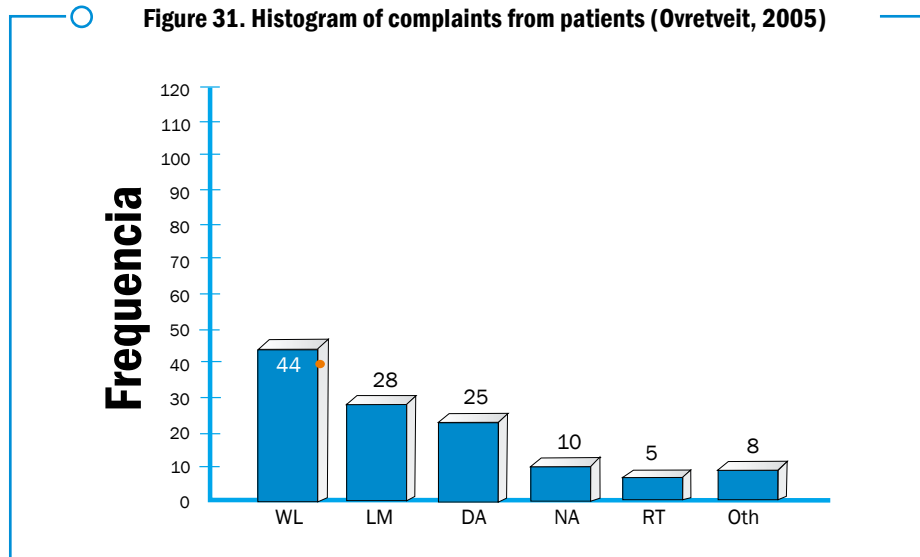
Run-chart and control chart

Run-charts are line graphs which display data collected over time. They show variations in process according to time, and the pattern of performance, and can be used to compare before and after improvements. This chart is useful to assess whether the variation is due to a special cause or a common cause.

The steps are the following:

1. Identify the key measurement of a process being measured, and draw this in the vertical axis of the chart.
2. Decide the units of time and how long will the data be collected. This will be shown in the horizontal axis of the chart
3. Collect the data in time order.
4. Plot the data onto a chart, calculate the average and draw this in a line in the chart.
5. Interpret the chart using appropriate judgement by identifying possible trends from the chart, outliers, potential process variation and random variation.
6. After an improvement is carried out, continue plotting the data and recalculate the average to observe any marked changes.

A control-chart is similar to a run-chart but with additional lines (upper and lower control limits) indicating whether a process is under control or not. The method used to test for and understand variation is known as statistical process control or SPC. The purpose of control-chart is to understand process variation and its cause analysis. It can also be applied to show the effect of process improvement actions, monitor and evaluate process stability, as well as to predict future trends in process performance. In health care, the control-chart is used in many situations and areas. For illustration, in planning, process maintenance and improvement, verification of effects of change in processes, deciding when an action is needed and so forth.

There are different types of control-chart, i.e. the XmR, XR and C charts. The most useful one for all sorts of data is, however, the XmR chart. The steps to construct this chart are the following:

1. Collect and tabulate the data from the process running under normal conditions.
2. Plot the data onto a chart in sequential order
3. Calculate and plot the mean (X) and draw a horizontal line at its value
4. Calculate the moving ranges (MR), i.e. the difference between consecutive observations in the data. For example:
   a. Observed data: 4, 10, 20
   b. MR: 6, 10
5. Calculate the average moving range (MR)
6. Calculate and plot hte upper and lower control limits for the chart using the following formula:
   a. Upper control limit (UCL) = X + (2.66 x MR)
   b. Lower control limit (LCL) = X – (2.66 x MR)
7. Plot the UCL and LCL onto the chart

The basic figure of a control chart is shown below (Varkey, 2007):

Figure 32. control chart
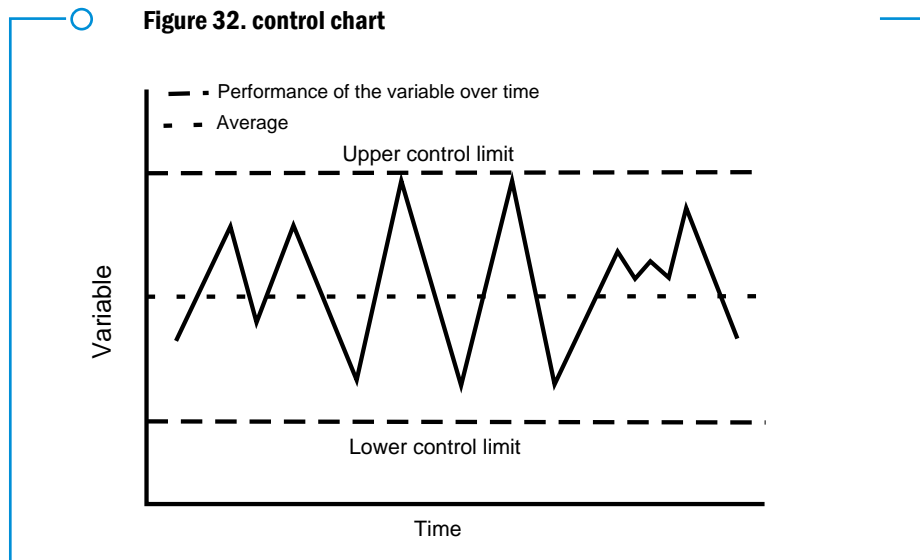
D. **Managing business activities at the microsystem level**

The microsystem contains interrelated clinical and business activities that are needed to deliver care to the patients. The previous parts in this chapter deal with governance, activities and tools linked to clinical activities that can be used to continuously improve clinical performance. This part will focus on the supporting system, i.e. managing business activities that are also crucial to support care processes. These include: managing human resources and nurses, provider behaviour, clinical information systems, logistics, planning and budgeting.

1. **Clinical information system**

The clinical microsystem involves interconnected activities between the patients and health professionals that produce incredible amounts of data. Patients' identity, history taking, physical examination, laboratory results or other diagnostic tests, diagnosis and treatment, referral, costs associated with the clinical processes from each patient seen in the hospital – all these will result in huge data availability. Unless these data are collected, processed, and further analysed, they will not become information.

However, when properly analysed and made available in a timely fashion, these data will provide rich information that can be used to support

decision making processes, as the basis on which to determine actions (clinical, managerial or strategic) taken to improve clinical performance. To be useful, information should fulfil the following criteria: cost, timely, complete, accurate, acceptable, relevant and accessible (Kusnanto, 2008).

In hospital management, information systems (or the system to manage information) can be classified into four levels according to the managerial levels at which support is provided. If we describe this in order, from the operational to the strategic level, the classifications are: transaction processing systems, management information systems, decision support systems and executive information systems. In this context, the clinical information system is a decision support system aimed to provide information that enables the users to make better clinical decisions based on evidence. The main users are the patients, physicians and other health professionals involved in delivering care. Therefore, clinical information systems require well-functioning transaction processing systems and management information systems. Information obtained from the patients (such as demographic characteristics, clinical information) and the knowledge base are integrated in order to make it easier for both patients and clinicians to make decisions throughout care processes.

Information technology certainly has a major role in the advancement of clinical information systems. IOM (2001) in its report on "Crossing the Quality Chasm" emphasizes that health care should be supported by systems that are carefully and consciously designed to produce care that is safe, effective, patient-centered, timely, efficient and equitable. This should also be applicable too for the microsystem level and the following principles for creating a useful information environment supporting quality care should be borne in mind (Nelson et al., 2003):

- Principle 1: Design it. Provide access to a rich information environment
- Principle 2: Connect with it. Use information to connect patients to staff and staff to staff
- Principle 3: Measure it. Develop performance goals and linked measures that reflect the primary values and the core competencies essential for providing needed services to patients
- Principle 4: Use it for betterment. Measure processes and outcomes, feed back data and redesign continuously based on the data

Having said that information technology plays a key role in clinical information systems, this does not necessarily mean that information has to be readily accessible in electronic format. An example of a manual clinical information system developed in Indonesia to assist both the patients and health professionals is the health card, containing growth chart of the under-fives (or Kartu Menuju Sehat). The information contained in this health card can be used to assist health professionals, health volunteers and parents. Another example is the mother and child health book (or buku KIA) which contains information for patient education and clinical information recorded in each visit. This book also functions as a patient medical record (kept by the patient) and therefore, it ensures continuity of care if the patient seeks care elsewhere.

The potential of clinical information systems to enhance the patient-clinician encounter has been noted. Generally, the advancement of information technology (including the internet) has been recognized in six areas, i.e. consumer health, clinical care, administrative and financial transactions, public health, professional education and research (IOM, 2001). Adapted from National Research Council (IOM, 2001), applications of the internet that are related to clinical and business activities at the microsystem level are the following:

Table 17. Applications of internet at microsystem Level

Consumer health	Clinical care	Professional education	Administrative and financial transactions
Online searching for health information	Searches of medical literature	Accessing reference material	Videoconferencing with real-time sharing of documents
Searches of medical literature	Routine care delivery and chronic disease management	Distance education	Enrollment of patients
Downloading of educational videos	Reminders and alerts; decision support system	Real-time consultations with experts	Scheduling of appointments
Search for a clinician or health plan	Consultations among clinicians	Virtual classrooms, distributed collaborative projects and discussion	Billing for services, payment of providers
Participation in chat and support groups	Remote monitoring of patients in home and long-term settings	Simulation of surgical procedures	Certain aspects of clinician credentialing

Table 17. Applications of internet at microsystem Level - continued

Consumer health	Clinical care	Professional education	Administrative and financial transactions
Online access to personal health records	Transfer of medical records and images	Virtual exploration of three-dimensional environments	Consumer access to information about health plans, participating providers, eligibility of procedures, covered drugs in formulary, etc.
Completion of patient surveys	Remote and virtual surgery		

Patients and care takers also need to be well-informed of the clinical problems and care processes they experience in order to be able to participate throughout clinical processes. Patient education is an integral part of care, and nowadays different media and technologies for informing patients are available (such as printed, audio, audiovisual, electronic etc.). Leaflets and booklets usually provide general information concerning available services, illnesses, procedures or clinical interventions. Audio and audiovisual aid through radio, video and television are also available to convey general health education messages (such as smoking, immunization) or diseases in a given country (such as dengue, TB, cancer etc.). In more sophisticated hospitals, their use is further integrated into a specific service provided for the patients. For example, before undergoing bone marrow transplantations, patients and their care takers are invited for a family conference in which they will be asked first to watch a video related to the procedure, followed by discussion with the care team.

When internet is accessible to the household, information becomes highly accessible and the demand for patient education is even higher. Different websites are dedicated for the patients to empower them in dealing with health care. Information varied from general information to specific diseases or procedures. Few examples are:

■ www.patienteducationcenter.org: a website called Pri-Med patient education centre created by Harvard Medical School
■ www.Mdconsult.com: containing more than 10,000 patient education handouts developed by the American Academy of Family Physicians
■ www.facs.org/patienteducation/: a special website on patient education in surgical care created by the American Colleges of Surgeons

Even a bibliographic database used primarily by health professionals and researchers, such as Medline, currently it offers a special service that is consumer-oriented health information, namely MedlinePlus®.

Diabetes management provides a good example of a more advanced internet-based model, where patient education is integrated into clinical management to foster a better patient-clinician partnership, aimed at improving compliance and outcome (Ma et al., 2006; Lee et al., 2007). Lee's framework below shows that patient education not only serves to improve patient's knowledge concerning the disease, but also informs the patient of care processes and their results, and alerting and reminding patients when next steps need to be taken. The information provided to the patient also incorporates information taken from the medical record. Through this, physicians-patient educators-patients are able to collaborate better to achieve an optimum result.

Figure 33. The framework of a patient-oriented education management system (Lee et al., 2007)
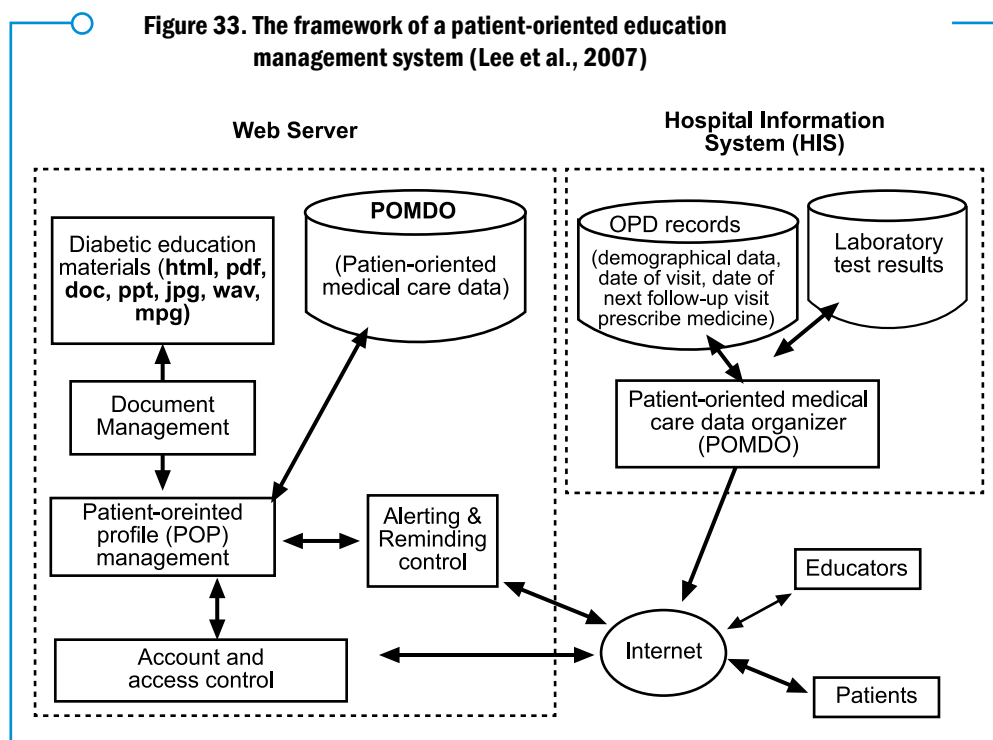
The need for health professionals to keep updated on the latest knowledge in medicine also requires the professionals to be able to access references stored in a database. Information technology facilitates access to health-related information, including the bibliographic database of more than 16

million references to journal articles in the life sciences (National Library of Medicine, 2009). Standards, clinical guidelines, clinical pathways of different diseases and conditions are also widely accessible through the Internet (for example, see www.guideline.gove, www.sign.ac.uk). Other benefits are the use of information technology for distance education for health professionals. The Institute of Healthcare Improvement (www. ihi.org) is one example of an institution offering continuous professional development through internet and teleconference. Many higher academic institutions are also offering formal education through electronic distance learning mode. Consultations with experts (either in real time or providing responses at a later time), and virtual classrooms using videoconference, and the simulation of surgical procedures are also possible.

In a situation where all patient data are accessible in electronic format (namely computer based patient records), the role of health professionals in making clinical decisions can be further enhanced. This is especially possible if all demographic and clinical data, as well as data related to care processes, are entered and stored in a database. In this way, different functions can be integrated in the system, such as alerting, assisting, critiquing, diagnosis- even case management. Different alerts system can be incorporated, such as alert systems for excessive laboratory orders, duplication of drugs, availability of generic drugs, multiple prescribing, multiple antibiotics etc. This information can even be delivered on your PDA (Personal Digital Assistant) (see example on drug formulary at www. epocrates.com) (Fuad, 2008).

The development of computer-based patient records has been initiated in Indonesia, although it is still limited. The main difficulty is related to physician behaviour, i.e. low compliance of the physician to complete medical record coupled with their attitudes related to use of information technology and information system barriers. Those that have successfully implemented computer-based patient records reveal the following factors have contributed to success:

- Leadership, commitment and organization vision
- Aimed to improve clinical process and patient services
- Involved clinicians in system design and modification
- Improved and sustained clinical productivity
- Keeping the momentum and support toward clinicians

The use of information technology for patient safety has also been developed. Its potential to reduce adverse events overall is plausible, and achieved through three mechanisms: (1) preventing adverse events; (2) giving timely responses after an adverse event occurs; and (3) tracing and giving feedback related to adverse events (Fuad, 2008).

Figure 34. Drug formulary at your PDA

Adult dosing   Drug interactions
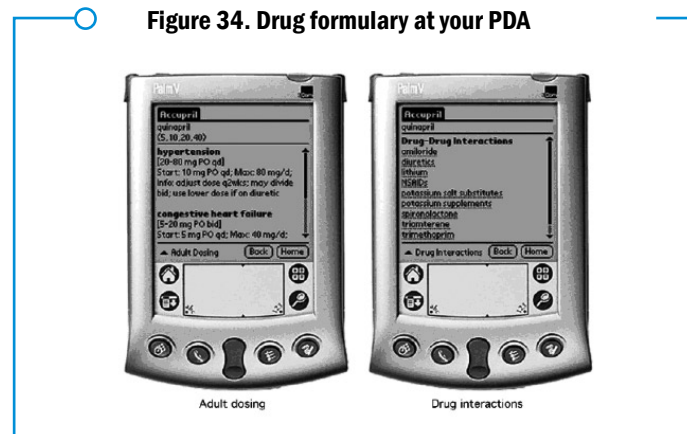
As many adverse events are attributable to medication errors, one well known application of information technology for patient safety is computerized physician order entry (CPOE). Medication errors alone contribute to 7,000 deaths annually (IOM, 2000), often adding tremendous financial burdens to their fatal consequences. CPOE uses the direct entry of orders (including diagnostic tests, medications, patient care and referrals) into a computer by a physician or another authorized prescriber such as a nurse practitioner. These orders are then automatically checked for potential errors or problems. The advantage of CPOE includes prompt warnings against the possibility of drug related problems, keeping up with new drugs in the market, giving drug-specific information to reduce confusion of sound-alike drugs, improved communication between physician and pharmacist and reduced healthcare costs (The Leapfrog Group, 2009). CPOE and team interventions show a reduction of 55% in serious medication errors and 17% in preventable adverse drug events (Bates et al., 1999 in Shojania et al., 2001).

Table 18. Clinical decision support applied to the ordering of medications and tests

Objectives	Example
Reducing medication errors	Drug name checking
	Drug dose, administration route, and frequency checking
	Drug allergy checking
	Drug-drug interaction checking
	Drug dose recommendation based on patient's renal or hepatic function
	Structured entry templates
Promoting clinically appropriate choices	Electronic access to clinical reference database and medication guidelines
	Prerequisite or subsequent test recommendations (for example, drug levels)
	Duplicate order checking
	Disease or problem-based medication and test order sets and recommendations
Promoting cost-effective choices	Substitute medical or test recommendations
	Display of recent test results
	Duplicate and redundant test checking
	Listing od medications by hospital or health plan formulary

Source: Doolan & Bates, 2002

In Indonesia, a few hospitals have also started the development of CPOE, with various degrees of utilization (such as electronic recording of drug orders, reducing waiting time in pharmacy service, alerting drug duplication and side effects). Although the benefit of CPOE in improving patient safety is promising, there are barriers to its adoption. These include (Doolan & Bates, 2002):

■ Lack of alignment with the physicians' work practices
■ Current level of technology and integration of IT system used in hospitals
■ Status of commercial systems to purchase vendor-built systems
■ Cost of investment to adopt CPOE
■ Lack of financial incentives for organizations to adopt the technology.

In addition to the benefit of clinical information systems for patient-health professional encounters, those who are engaged in quality improvement activities will also collect different clinical indicators. Financial managers

will certainly request data related to costs associated with provision of care. All these create a situation in which in order to show excellence in clinical performance, there is no other option except managing the clinical information system in an efficient way, to support the patient-clinician interaction in producing the highest possible care for the patients.

The relevance of clinical information system goes beyond the boundary of a particular microsystem. When visiting a hospital, patients may receive services from several microsystems, such as outpatient clinics, laboratory, radiology, pharmacy, etc. Patients admitted in the hospital often obtain care from many health professionals, such as physicians (may involve more than 1 specialties), nurses, nutritionist, physiotherapist, etc. Therefore, in this context, information exchange becomes the interface that not only connects hospital staff to patients, but also staff to staff within the microsystem, microsystem to microsystem, and microsystem to macro-organization (Nelson et al., 2003).

An example of a comprehensive design and implementation of IT for microsystem level below provides integrated information of the clinical and business aspects in a microsystem level. Applying the balanced score card for measuring performance in a spine centre, the information is used to make improvement (i.e. concerning access) and overall, to sharpen its strategic focus for the upcoming year (Nelson et al., 2003).

**Figure 35. Balanced score card at a spine centre in Dartmouth
Business Unit, New Hampshire**

Balanced Scorecard: Spine Center at Dartmouth Business Unit

Key Processes

| Aim: | To do the right things at the right time for the patients. |

Measure: Shared decision making (SDM): Diagnosis specific patients checked out either the Herniated Disc or Spinal Stenosis video.

Access: Preferred appointment met for patients seeing a surgeon for the first time.

Action plan: SDM: No current plan to improve the process.
Access: Scheduling/Access workgroup formed in January 2002.

Innovation & Learning

Aim: To create a stimulating and enriching research setting and education of staff.

Measure:

Action plan: Grant writing in progress.

Satisfaction versus Need

Aim: To meet the expectations of our patients.

Measure:

Action plan: No current plan.

Financial

Aim: To be a fiscally solvent specialty clinic.

Measure: Median Margin Surgical Procedures DHMC   Utilization of Clinic Time

Action plan: No current plan.

Despite the promises, the barriers to achieving its potential remain. Physicians in their work utilize advanced medical technology and are encouraged to base their decisions on updated literatures. Yet, they are still very much relying on their memory when diagnosing diseases or writing prescriptions. For illustration, hospitals in Indonesia have been encouraged to develop their own drug formulary. However, their application in the daily work place is still rare, and efforts to create a supporting system that will facilitate the optimum use of drug formulary are needed. A timely alert system or reminder of the existing drugs available in the drug formulary would be useful to assist the physician.

Electronic medical records have been established with limited use for both the physicians and patients, as it requires a considerable time for physicians (or other allied health professionals) to enter the data manually. If not carefully implemented, paper-less medical records could turn into paper-less information. This is factual when compliance of care

documentation in the medical record is still low. Often, this phenomenon (i.e. incomplete medical records) is simply interpreted as the need to develop an electronic medical record, without further thought on reasons medical records are incomplete - the medical professional culture, coupled with poorly integrated and designed IT.

Where IT is poorly designed and integrated, instead of supporting patient-physician encounters, the application of IT in the microsystem becomes an additional burden for the physician and provides reduced quality, due to less time spent to interact with patients. Overall, over time, negative influences of IT application - as indicated by inefficiencies, work overload and inadequate IT - may foster mismanagement of health information in clinical interactions (Weiner & Biondich, 2006). Therefore, the development and implementation of a clinical information system requires strong leadership, high commitment from the organization and intensive involvement of clinicians in order to succeed and support the patient-clinician interaction.

2.   Human resource management

In this section, several aspects in human resource management that are most relevant to the clinical microsystem will be discussed. Team work and communication is first and foremost, followed by conflict management, human resource planning, and performance. Other issues in human resource management which are relevant to the organizational level are dealt with in the next chapter.

2.1   Building a team work

Patient care involves interdependent processes carried out by teams of skilled individuals with varying clinical backgrounds, roles and responsibilities. By definition, a team can be defined as a group of individuals with specific skills who work together and interact to achieve a shared purpose (Shortell and Kaluzny, 1997). For illustration, a woman with a full-term pregnancy requiring a cesarean section will interact with a team of health professionals, consisting of obstetrician specialist, anesthesia specialist, OR nurse, circulating nurse in the operating room and those working in the wards such as paediatrician, midwive, nurse,

nutritionist, assistant pharmacist etc. The patient will also experience more than one microsystem, i.e. the microsystems in the emergency service (when entering the hospital), in the operation room, the maternal ward and neonatal ward. In this situation, the main challenge for the hospital (or specifically the microsystem) remains, therefore, how to combine all the potential, skills, experiences and vision of its members to deliver the best care possible through teamwork. To achieve this, the technical aspects of clinical care, patient safety, respect for patient rights and professional ethics are all an integral part of care processes.

At all levels of care, the team is essential: delivering care to patients is simply not possible without the involvement of a team. Health care, by its very nature, is multidisplinary. Imagine if a surgeon were to operate on his/her own without any assistance from others! IOM recommends that health care organizations should promote effective team functioning as one of five interventions to ensure safe health care (Kohn et al., 2000). This is further highlighted in the IOM 2001 report on Crossing the Quality Chasm, in which development of effective teams is one of the six main challenges in health care services that cut across different health conditions, types of care and care settings. Other challenges are redesign of care processes based on best practice, use of information technologies to improve access to clinical information and support clinical decision making, knowledge and skills management, coordination of care across patient conditions, services and settings over time and incorporation of performance and outcome measurements for improvement and accountability. Likewise, the value of teamwork is also emphasized in high-performing front-line clinical units. In a review of 20 high-performing clinical microsystems in the US, Nelson et al. (2002) came up with nine success characteristics of microsystems, including interdependence within the care team.

It is clear that effective teamwork must be created and maintained in any health care organization. Shortell and Kaluzny (1997) identify different types of teams, basically divided into reference groups and membership groups. Reference groups are groups or individuals that we refer to for specific purposes, such as seeking advice, making judgements, asking for expert opinions. Their membership can be constructed as either informal or formal groups. Informal groups primarily focus on their members' satisfaction and common personal needs, while formal groups (work groups

and management teams) exist to accomplish specific purposes and are organized around specific tasks and responsibilities on a permanent basis. In hospitals, the operation room, delivery ward, neonatal unit, emergency service, pharmacy unit etc. are examples of work groups. In addition to management teams, hospitals also have different groups known as standing committees. The medical committee, hospital pharmaceutical committee, nosocomial infection committee, quality improvement committee, DOTS committee for TB case management, HIV/AIDS committee are examples of standing committee which are characterized by well-defined roles and responsibilities, but with the possibility of fluid membership. Another important type of group is the task force, which is a group formed to work on a specific assignment or project. This group is usually dissolved once the task is completed. For example: a strategic planning team, remuneration team, and so forth. This type of group is, in fact, the most difficult group to manage.

In practice, the limited recognition of the importance of teamwork is in stark contrast to the evidence from research. Although the message of the importance of teamwork has been conveyed and repeated over and over again, the reality still differs from what all patients, health professionals, and health care managers would expect to hear. Literature on patient safety is filled with many examples of how poor teamwork exists and create a disastrous effect on the patients. In obstetric care, evidence from reviews of malpractice claims, sentinel events and literature review have reported consistently that communication and teamwork are among the top contributors to adverse events and malpractice claims (Guide, 2008). As many as 31% of adverse events were attributable to communication problems (White et al., 2005). Similarly, in the US, the Joint Commission reported that communication and teamwork issues are the most common contributors to both unexpected perinatal deaths and injuries (accounting for 72%) and maternal deaths and injuries (accounting for 85%) (Joint Commission, 2009). Likewise, communication failures are also evident in the investigation of sentinel events, such as wrong site surgery. They occurred in 30% of procedurally relevant information exchanges among operation room team members and approximately one third of these communication failures had observable negative outcomes including delays, inefficiency and team tensions (Lingard et al., 2004). Even 30 years ago, a publication in the discipline of anaesthesia recognized the

imbalance between technical and human factors issues, with 70-80% of anaesthetic and surgical mishaps actually caused by human factors related to interpersonal interactions and miscommunication (Schaefer et al., 1995).

Although this evidence shows how teamwork contributes to adverse events, when it is well-developed, its potential for improving care is too obvious to be neglected. Studies have shown that the effectiveness of teamwork goes beyond the prevention of adverse events, resulting in improved patient outcomes, decrease lengths of stay, decrease costs and improved quality of work life for the team members. In a study carried out in the Intensive Care Unit (ICU), multidisplinary rounds and an emphasis on evidence-based best-practice significantly decreases ICU length of stay, hospital length of stay, costs and charges; reduces incidence of ventilator-associated pneumonia and bloodstream infections, decreases adverse events and decreases 21% of costs per ICU discharge (Jain et al., 2006; Young et al., 1998). Moreover, in well-structured health care organizations such as the Mayo Clinic in the US, effective medical-clinical staff teamwork is recognized as a distinguishing feature. Practicing team medicine is part of the culture and competency, passed on to new team members, and the management functions are geared towards supporting this culture (Berry and Seltman, 2008).

Despite the fact that teamwork is crucial, most health professionals rarely have training in developing team-work. Instead, their training is focused on their own field and they are largely trained in their own separate professional groupings. Those studying medicine, nursing, midwivery, pharmacy, and the allied health professions, are all trained in their own separate faculties, when in fact they are supposed to work in a team. Non-technical skills including team management and communication skills are not given significant emphasis yet in the curriculum. When the curriculum does incorporate this, the learning environment mostly does not support the content. Teamwork is, at best, taught by an individual health professional, in a large class-room, with limited discussion and few practical skills shared. Throughout the long years spent in formal education, opportunities to learn teamwork using an interprofessional training approach are still relatively scarce.

During the last ten years of vast knowledge development in patient safety, many lessons have been drawn from 'high reliability' organizations, such as those in aviation and nuclear power, and applied to the health care industry. The relevance is straightforward. High reliability organizations operate under hazardous environments, but they are able to maintain an exceptionnaly safe workplace. The health care industry is indeed a complex organization, and specific services (such as those undertaken in the operation room, intensive care unit, emergency room) can also be harmful to the patients. One of the areas mostly borrowed from the aviation industry is team training, especially for highly complex situations.

Box 14. The WHO surgical safety checklist

Surgery is one the most complex health interventions. WHO states that more than 100 million people require surgical treatment every year. Problems associated with surgical safety in developed countries account for half of the avoidable adverse events that result in death or disability (WHO, 2009). Further, in the developed world, nearly half of all harmful events affecting patients in hospitals (such as miscommunication, wrong medication, and technical errors) are related to surgical care and services. The evidence suggests that at least half of these events are preventable if standards of care are adhered to, and if safety tools, such as checklists, are used.

In 2008, a surgical safety checklist to implement safe surgery guidelines was launched by WHO, and a revised version was published in 2009. The checklist consists of three phases in the surgical process: sign in (before anaesthesia induction); time out (before incision); and sign out (before leaving the operation room). The findings from pilot studies conducted in eight countries show that utilization of the checklist was able to improved teamwork and communication creating safe practices, decreasing the rate of death from 1.5 to 0.8%, decreasing inpatient complications from 11.0 to 7.0%, increasing appropriate use of antibiotics from 56 to 83%, and reducing SSI by 33 to 88% (Haynes et al., 2009).

Figure 36. The WHO surgical safety checklist

Before induction of anaesthesia	Before skin incision	Before patient leaves operating room
(with at least nurse and anaesthetist)	(with nurse, anaesthetist and surgeon)	(with nurse, anaesthetist and surgeon)

Before induction of anaesthesia

Has the patient confirmed his/her identity, site, procedure, and consent?
☐ Yes

Is the site marked?
☐ Yes
☐ Not applicable

Is the anaesthesia machine and medication check complete?
☐ Yes

Is the pulse oximeter on the patient and functioning?
☐ Yes

Does the patient have a:

Known allergy?
☐ No
☐ Yes

Difficult airway or aspiration risk?
☐ No
☐ Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?
☐ No
☐ Yes, and two IVs/central access and fluids planned

Before skin incision

☐ Confirm all team members have introduced themselves by name and role.

☐ Confirm the patient's name, procedure, and where the incision will be made.

Has antibiotic prophylaxis been given within the last 60 minutes?
☐ Yes
☐ Not applicable

Anticipated Critical Events

To Surgeon:
☐ What are the critical or non-routine steps?
☐ How long will the case take?
☐ What is the anticipated blood loss?

To Anaesthetist:
☐ Are there any patient-specific concerns?

To Nursing Team:
☐ Has sterility (including indicator results) been confirmed?
☐ Are there equipment issues or any concerns?

Is essential imaging displayed?
☐ Yes
☐ Not applicable

Before patient leaves operating room

Nurse Verbally Confirms:
☐ The name of the procedure
☐ Completion of instrument, sponge and needle counts
☐ Specimen labelling (read specimen labels aloud, including patient name)
☐ Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:
☐ What are the key concerns for recovery and management of this patient?

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.   Revised 1 / 2009   © WHO, 2009

As recommended by IOM (2001), numerous team training programs have been developed and implemented in response to the patient safety crisis. Team training is defined as the application of instructional strategies based on well-tested tools toward a specific set of competencies. These competencies incorporate team behaviors such as communication, coordination, cooperation, leadership and monitoring (Jeffcott and Mackenzie, 2008). In principle, these training programs focus on improving team performance and minimizing errors. They also share a common philosophy: that the practice of desirable behaviours during times of low stress increases the likelihood that emergencies will be handled effectively. When the team is not under pressure, asking for help when overloaded, monitoring each others' performance and actively assisting others who need help, makes these behaviours a more likely team response when the team is under stress.

Examples of this are found in crew resource management (CRM), developing rapid response teams, medical team training and high reliability teams. Several studies applying these training programs in different healthcare

settings have shown their potential in improving team communication, such as between anesthesiologists and surgeons in the OR setting (Awad et al., 2005), and in ensuring compliance with perioperative safety practices (France et al., 2008). Further studies looking at team processes and outcomes will continue to improve the effectiveness of these training programs.

Finally, in order to ensure effective teamwork, several factors need to be considered both at the team and organizational level (Shortell and Kaluzny, 1997). The following group characteristics make a notable contribution to team performance: composition and size, norms, role relationships, group role clarity, group cohesiveness and status differences. In addition, group processes including leadership, communication, decision making and stages of group development (forming, norming, storming, performing, adjourning). Therefore, evaluation of team effectiveness usually involves productivity (in fulfilling its mission), quality of work, team satisfaction and continuing capacity-building of the team. This section particularly illustrates how this is relevant for the microsystem level. Different mechanisms to enhance team effectiveness should be encouraged. Firth-Cozens (2001) suggests the following aspects:

- Improving decision making
- Listening to patients
- Rewarding teams
- Encouraging innovative solutions
- Autonomy and accountability
- Leadership

Box. Practical exercise

Fill in the following items with your colleagues involved in the hospital surgical team with a simple yes and no answer (Source: Mills et al., 2008). Discuss the findings with the surgical team to reveal the current practice. How is the communication and teamwork?

Communication

Our team routinely briefs procedures before starting them.
Our team routinely debriefs procedures after completing them.
Our team has specific way of ensuring that all members understand al important communications.
Workload and task distribution are dearly communicated in our work environment.
During surgical and diagnostic procedures, everyone on the team is aware of what is happening.

Teamwork

Every on our team is comfortable giving feedback to other team members.
Morale on our team is high.
Our team members understand each other's strength and weaknesses.
Our team members have mutual respect for each other.
Our team has successful method for resolving conflicts between team members.
I know the first and last names of all members of my surgical team during the conduct of procedures in the OR.
The surgeon and anesthesiologist maintain open channels of communications during procedures in our OR.
Our team has a shared vision of how to improve

2.2   Conflict management

Conflict is a natural phenomenon and is inherent in any organization, and social life in general. Fisher (2000) defines destructive conflict 'as a social situation in which there are perceived incompatibilities in goals or values between two (or more) parties, attempts by the parties to control one another, and antagonistic feelings towards each other'. Using this definition, Fisher further explains that conflict resolution should not only provide the mechanisms for dealing with differences, but also act as an approach to facilitate constructive social change towards a responsive and equitable system.

Conflict occurs for many reasons and can be characterized in many ways. Conflict in organizations appears to be associated with fundamental

problems inherent in every organization. It may be related to power differentials, allocation of financial resources, competition over scarce resources, information, responsibilities, etc. In addition to competition for resources, conflict may arise from differences in perceptions, ideas or beliefs concerning organizational goals, values, and norms. Health care organizations are no exception in their susceptibility to conflict, and this may occur at all levels, from the individual level up to organizational level.

Nevertheless, not all conflict is destructive. Often conflict is valuable, since it promotes innovative and creative problem-solving, and challenges deeper understanding. If it is well-managed, it becomes a useful element in the life cycle of an organization. Conflict can take place within individuals (intrapersonal conflict), between individuals (interpersonal conflict), within a group (intragroup conflict) and between groups (intergroup conflict). In many ways, intragroup conflict is alike to interpersonal conflict but with increased complexity, due to the number of persons involved.

The alternatives for conflict resolution depend upon the level in the organization at which it exists (Shortell & Kaluzny 1997). To illustrate, the operating room is a setting where a broad range of professionals (physicians, nurses, technicians) work as team, and therefore, has the potential for intragroup conflict. The roles within the group and the group norms influence the interactions of group members. Conflict within the group could result in decreased coordination, communication and productivity. Resolving conflict within this group will need to be managed differently to conflict management in other areas of the hospital.

Organizations cannot avoid intergroup conflict from occurring. It is almost impossible to design work processes that fit perfectly with the task of other groups. There are various causes of intergroup conflict, many of which are similar to interpersonal conflict, such as resource scarcity, differing beliefs, or incompatible goals. The difference is simply that the relevant unit from which the differences stem is the group, rather than the individual. There is a variety of consequences both within and across the groups involved in the conflict. Cohesiveness, task orientation, loyalty to the group and acceptance of autocratic leadership may increase within the group. While distorted perceptions, negative stereotypes of outgroup members and reduced communication may result from conflict between the groups. Normally, a mentality of "us versus them" exists and grows stronger as the conflict escalates (Shortell & Kaluzny 1997).

As conflict is both common and unavoidable, organizations must develop conflict resolution strategies in order to manage conflict effectively. Before planning the strategies, organizations have to recognize potential causes of intergroup conflict. In most cases, these conflict can result from interpersonal differences and factors related to the interdependence among the groups, for example, where a medical group practice needs to have laboratory results reported in a timely manner but the information system is ineffective. Another cause of conflict is ambiguity in responsibilities or roles such as in the conflict between psychologists and psychiatrists, who often have overlapping areas of jurisdiction. Task ambiguity, differences in the work orientation of the groups and differences in culture or interpersonal orientation among groups may all lead to conflict.

There are many strategies to manage conflict, strategies that can be planned in advance, and those that need to emerge responsively as conflict is experienced. Some conflict management techniques apply to all levels of conflict, while others are only relevant for limited types and levels of conflict. In the best-case scenarios, the interfaces among groups simply need to be fine-tuned, while in the worst situations organizations need to wholly overhaul the work process in order to make intergroup relationships work (Shortell & Kaluzny 1997).

Conflict management refers to the modes used by either or both parties to cope with a conflict. Adler and Towne (1990) identifies three possible courses of actions when faced with a conflict, i.e. accepting the status quo (and learning to live with it), using force and mandating change, and reaching an agreement by negotiation. The outcomes could be a win-lose approach, lose-lose approach or win-win approach. Other approaches focus on the typology of predominant modes in conflict management. Thomas and Kilmann (1978) has developed a two dimensional axis framework using assertiveness and cooperativeness as axes, and defines five conflict-handling modes: competing, avoiding, accommodating, compromising and collaborating. These five modes are still commonly used, despite changes in organizational environments.

Table 19. Conflict Management Strategies

Style	Definition	Use
Competing	Pursuit of own concerns at the other person's expenses, using whatever power seems appropriate to win. Assertive and uncooperative.	Use of competition might mean standing up for your rights, defending a position you believe is correct, or trying to win.
Collaborating	Attempting to work with the other person to find a solution that fully satisfies the concerns of both. Assertive and cooperative.	Use of collaboration might involve digging into an issue to identify the underlying concerns of the two individuals to find an alternative that meets both sets of concerns.
Compromising	The object is to find an expedient, mutually acceptable solution that partially satisfies both parties. Intermediate in both assertiveness and cooperativeness.	Compromise might mean splitting the difference, exchanging concessions, or seeking a quick middle-ground position.
Avoiding	One does not immediately pursue own concerns or those of the other person or address the conflict. Unassertive and uncooperative.	Avoiding might take the form of diplomatically sidestepping an issue, postponing an issue until a better time, or simply withdrawing from a threatening situation.
Accommodating	Neglecting one's own concerns to satisfy concerns of the other person. Unassertive and cooperative.	Use of accommodation might take the form of selfless generosity or charity, obeying another person's order when you would prefer not to, or yielding to another's point of view.

Source: Thomas and Kilmann (1978), cited from Sportsman and Hamilton (2007).

Regardless of the approaches taken in managing intergroup conflict or other types of conflicts, it is crucial for managers to understand their role and responsibilities in assisting others to change conflicting situations into positive and cooperative atmospher. Effective conflict management promotes further individual and organizational growth.

2.3 Human resource planning

Human resource issues are of increasing importance to any organization. Human resource planning is the process of identifying and responding to these issues, and charting new policies, systems, and programs that will ensure effective human resource management under constantly changing condition.

Nowadays, the demand for quality care is escalating, and as a result, the hospital has to make additional efforts to ensure resources are adequate

to achieve high quality care. One crucial aspect in this endeavour is human resource planning. Every unit/department within a hospital has to develop the right mix of human resources needed to deliver the service. Shortages of personnel can produce a direct impact on the clinical outcome. For example, not having adequate numbers or types of staff in the operating room team can create negative outcomes such as increased adverse events or complications.

Human resource planning is a process to estimate the quantity of human resources based on location, skills and competence required to provide health services. Types of human resources (who is performing what task), their specifications, level of skills and competence and the number of human resources are determined based on predicted health services function and workload. Through appropriate human resource planning, organizations are able to:

- Attract a sufficient quantity of human resources with adequate skills to operate effectively and achieve organization goals
- Employ an adequate number of human resources on a full-time or part-time basis to prevent shortage and surplus
- Ensure appropriate training and development programs to improve performance
- Anticipate and cope with changes in work demand or human resource quantity.
- Meet future human resources criteria from internal sources
- Assure that all employees have the same opportunities
- Control human resources costs

Figure 38. Hospital Human Resources Planning Process
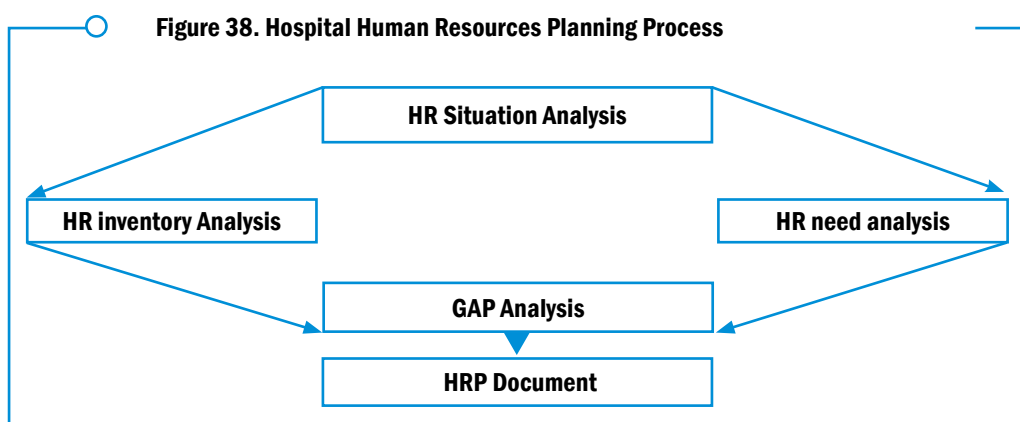
To conduct human resource planning, one must first understand the hospital's goals and targets. The macro-environment factors (such as law and regulations, population characteristics, disease patterns) as well as micro-environment factors (such as hospital mission and vision, workload and performance) should also be comprehended prior to performing the following steps in human resource planning:

1. Analysing current human resources and their sufficiency for the future

2. Analysing hospital human resources availability (inventory)

3. Analysing the need for human resources in the future

4. Analysing the gap between current human resources and the needs for the future

5. Documenting/recording the need for hospital human resources, for quantity, types and competencies in certain period.

The final step in conducting human resource planning involves certain formulas in order to come up with the number of human resources required. Three methods are available and will be described further in the training module. These are:

- Generic method, consisting of:
    o Personnel to population ratio
    o Health service target method
    o Health service demand
    o Health needs method
- Managed-healthcare System Method
- Work-load Indicator Staffing Need (WISN)

For hospitals in Indonesia, decentralization poses a special challenge for human resource planning. Most responsibilities for planning and managing health human resources were handed over to local government. Local government consists of both provincial and district governments. Unlike the structure in many other countries, the district in Indonesia doesnot come under the province however. Both provincial and district governments, together with their respective health authorities, have a large role in managing human resources. It is in the best interest of local governments to ensure the best possible staffing for their health facilities, since they now have substantial responsibilities for health service delivery.

This requires examination of whether the overall numbers and mix of different types of staff, and the way they are distributed between different health facilities, are appropriate.

The old ways of assessing and planning staff numbers, mix and distribution (staff per population ratios, fixed staff per facility) failed to take such differences into account. WISN (Workload Indicators of Staffing Need) has been a better method, since it calculates how many health workers (of different types) are required in a health facility based on the current workload. WISN also makes it possible to examine how many personnel would be required if the workload increased or decreased in the future. Furthermore, it shows how the workload stress which health workers experience varies between different health facilities. This method was largely introduced and implemented in West and East Nusa Tenggara provinces.

WISN is a versatile tool and the scope of WISN development may vary. WISN can be used to examine only one category of staff in one or several different types of health facilities including hospitals. It can also be used to examine several different categories of staff at the same time, such as specialists of different types in a provincial hospital. Although the WISN methodology can be used in both small and large applications, management are best to begin with less complex calculations and expand. The WISN scope and use may be enlarged later, as those developing WISN gain confidence in the methodology. Existing provincial, district and hospital meetings can be used to develop WISN. A one day workshop, setting up a Steering Committee (SC) at the start of the WISN process, is essential, in order to ensure that decision making is understood and accepted by those who are authorized to make changes in staffing.

The first step is to choose the staff category for which to develop the WISN. This is important as it clearly defines the scope of the WISN development. The available working time for that staff category must then be estimated. The next step is defining the major workload components of the staff category, and setting activity standards for each component. Based on this, you establish Standard Workloads for the particular staff category (or categories). Next, you calculate Allowance Factors which will have an impact on the required number of total staff. When all these steps are completed, you determine the staff requirements based on WISN. After

WISN results are ready, they should be examined and used to improve staffing.

The technique and process of job analysis will be explained further in this module starting by introducing different terminologies of job analysis. The key message is to put the right man on a specific job based on their ability, expertise and experience on doing such a job. At the end, the job analysis should answer these questions:

■ How much time is needed for the personnel to achieve their main tasks?
■ Considering the type of each job, which tasks that can be grouped.
■ How to design a job which can improve the staff performance
■ What kind of expertise is needed for a certain position?
■ What kind of education level is needed to improve the performance quality
■ What kinds of skills are needed to perform a certain job
■ Who is the best and most appropriate staff to perform the defined job
■ What kind of information gained through this job analysis can be used for human resources development.

3. Provider behaviour

3.1 Provider performance and behaviour

Researchers and health policy makers are more and more concerned about the association between financial incentives and provider behaviour, as well as about ways of controlling misbehaviour and motivating good behaviour. Doctors' decision-making behaviours are influenced by how and how much they are reimbursed. Therefore, the design of the remuneration system for medical doctors is an important key to the allocable efficiency of health care resources. Most patients are unable to assess their own needs for services. For that reason, they rely heavily on medical doctors for advice about the appropriateness of alternative diagnostic and treatment strategies. Consequently, doctors play a great influence not only on the supply of health care services but also on demand for such services. Thus, the doctors' decisions about health care services can have a big impact on the quantity, quality, and distribution of a society's health care resources.

Studies of doctors' behaviour have been characterized by three approaches: utility maximization models, income maximization models, and target income models (Liu and Mills 2007). Each model is described in the following paragraphs.

The utility maximization models argue that the doctor's utility function includes some of the following elements: profit (net income), leisure time, professional status, internal ethics, complexity of case mix, study time to keep up to date, number of support staff under the physician's supervision, and others. The utility maximization hypothesis predicts that doctors would behave to make the effort (including inputs such as time, working intensity, and monetary inputs) up to the point where the marginal utility of each unit of effort is equal for the different elements of the utility function.

The income maximization models believe that income (or profit) is a dominant element that affects the doctor's behaviour, that the doctor's behaviour is driven by income. The hypothesis argue that income for doctors, as for any other business person, is the most important element that can capture a dominant part of what can influence doctors' behaviour. This simple model explains doctors' behaviour almost equally well; and that the utility maximization models complicate empirical implementation and are unnecessarily fuzzy and complex. This income maximization hypothesis predicts that the doctor will behave in a way that maximizes his or her income, and that the right design of remuneration methods and financial incentive schemes can direct a doctor's behaviour.

The target income hypothesis recognizes that doctor has an expected level of income in relation to other equivalent doctors in the medical market. It implicitly assumes that, below the income target, the doctor's behaviour will be driven predominantly by income. Once reaching the income target, the doctor will consider other factors (as indicated in the utility maximization models) that may become more important to his satisfaction. Moreover, it predicts that, if the doctor is paid less than their expectations, they will behave like an income maximizer and do what they can (e.g., to induce patient demand) to maximize the income. If it meets the target income or even higher, the doctor will be more likely to behave in a way that satisfies others.

To analyze the doctors' behaviour, firstly, we have to look briefly at the characteristic of doctors in Indonesia and their possible behaviour. Doctors, practicing in different settings and with different incentives behave in different ways, as is obvious form three such groupings:

- Private office – based doctors
- Salaried office – based doctors
- Salaried hospital – based doctors

Doctors' behaviour may also change in response to the economic incentive–oriented "reforms" of the last 15 years. Even though improved productivity has not been shown, the restoration of private practice, the budget contract between social health insurance funds and salaried office-based doctors, the introduction of the bonus system for hospital-based doctors, and the lack of countermeasures prohibiting kickbacks, may provide doctors with incentives to behave against their patients' best interests. The system for paying doctors needs to be examined carefully (Preker et al., 2007).

Another consideration in discussing provider behaviour is hospital behaviour. Hospital behaviour models are studied to explain past hospital behaviour, to provide policy-making experiences and lessons for designing and regulating payment to hospitals, and to predict future behaviour under changing exogenous factors, including transformation of the payment system. Hospital behaviour following changes in the payment system can then be predicted with reasonable accuracy and a good payment system worked out.

Since different types of hospitals may have different goals, are financed differently and have different behaviour, in order to model the hospital behaviour, we must consider what type of hospital it is. The categorization of hospitals can provide the basis for considering the appropriateness and the utilization of various available models of hospital behaviour. On several dimensions, hospitals can be divided according to ownership status, financial objectives, educational responsibilities and employee status of their doctors (Preker et al. 2007).

One of the main objectives in developing models of hospital behaviour is to predict changes in hospital behaviour that will occur with the changes in exogenous factors. One of these factors is how and how much the hospital is reimbursed, which will provide scientific information needed

to design hospital payment systems. To be applicable to the design of hospital payment, a model must meet five prerequisites: *objective captivity, argument measurability, trade-off testability, utility estimatability and effect predictability*. If the five prerequisites can be met, hospital behaviour will be predictable.

3.2 Incentive system

Payment mechanisms concern how and how much health care providers are paid. The way providers are paid can create powerful incentives that influence their behaviour. The efficiency, quality, and quantity of health care are affected by changes in behaviour of health care provider. For the reason that payment mechanisms influence provider behaviour in delivering health care, and as a result, outcomes, great attention has been devoted to designing health care payment systems within the context of social health insurance schemes and escalating health care costs.

A good payment system ensures incentive-compatibility between payers and providers that promotes efficiency. Therefore, its design should be based on a thorough understanding of provider utility functions and the accurate prediction of provider behaviour. Moreover, an ideal payment system should provide incentives for cost-containment, quality assurance, and internal efficiency (productivity) and offer no incentives for over- or under-provision of services. In particular, it should be feasible. However, no existing payment mechanism meets these criteria. Recent studies in general conclude that there will never be a panacea for the payment system and that combining various payment methods may be the best approach.

Payment systems can be categorized in several ways (Preker et al., 2007):

1. Classification by the payment base or payment unit
   a. Fee-for-service payment, if the payment unit is based on itemized services.
   b. Capitation payment, if the payment unit is based on the number of individuals registered with a service provider.
   c. Salary, if the provider (doctor) is paid based on the time of work.
   d. Per diem or daily payment, if based on the number of days a patient stays in the hospital.

e. Case payment, if based on the number of visits for outpatient services or the number of admissions for inpatient services.

f. Budget payment, if based on periodic (usually yearly) appropriation of funds from either a flexible or fixed budget and from either a global or itemized budget.

g. Bonus, if an additional payment is provided based on achievements (evaluated against set targets).

2. Classification related to the timing of the payment or commitment—before or after services are rendered.

    a. Prospective payment, if prior to service.

    b. Retrospective payment, if after services are rendered.

    According to these definitions, fee-for-service, salary, and bonus payments are retrospective payments; daily payment, case payment, capitation, and budget are prospective payments.

3. Classification concerns whether the provider is paid directly by the payer (direct payment); otherwise, it is called an indirect payment. For instance, if the insured patient pays for the services and receives reimbursement from his or her insurer, this is an indirect payment. If a third party pays the provider directly for services rendered to the insured, the payment is a direct payment.

4. Classification based on the subject of payment, that is, the party paying for the care. The payment can be made out of pocket by patients, by a health fund, or by a third party, which can be a government. In addition, in the case of salaried doctors employed by a hospital, the party paying is the hospital.

5. Classification considers the object of payment, the party receiving the payment—a doctor or a hospital. The doctor's payment can be divided into payment for office-based doctors and payment for hospital-based doctors.

Incentives systems fall into the bonus system (classification by the payment base or payment unit). The bonus is a payment method that awards the payee extra money for achievement in association with established indicators of objectives. This payment system is intended to provide a financial incentive for the actors to behave in the interests of the payers. The intention may be economic in nature (e.g., profit and revenue objectives) or managerial (performance goals). The objectives can also be related to health policy objectives such as targets related to childhood

immunization rates and incidence rates of some infectious diseases. If the objective is concrete (revenue, profit, service quantity), the bonus can be paid according to a single indicator. For instance, an outpatient clinic can pay a bonus to its salaried doctors linked to extra visits provided over the normal standard. Abstract or multiple objectives are usually broken down into a set of indicators, and bonuses can be paid for achieving them such as, if the bonus is quality related, the quality objective should be broken down into several indicators related to each dimension of quality. Moreover, bonuses can also be paid according to the summarized score of service quality.

Bonuses may be paid by a third party to health service providers, by a health service institution to its employees, and by the government or health authority to affiliated health institutions. The party receiving a bonus can be an individual (individual incentive system), a group of people as a unit (group incentive system), or an organization (organizational incentive system). Furthermore, the bonus can be paid periodically within the year or as a lump sum at the end of the year. It can be paid along with the basic payment according to specific conditions of the bonus system or it can be paid independently of the basic payment. Bonus systems are often used in the health sector. Based to the available cases, the bonus system in health care can be divided into several types:

1. revenue-related bonus, the bonus is provided according to a revenue target or a certain proportion of the revenue.
2. savings-related bonus, which the provider is paid a portion of the total saving.
3. quality-related bonus, an additional payment for achieving predetermined quality standard.
4. quantity-related bonus, an extra payment geared to the amount of work performed
5. performance-related bonus "performance-related pay", used by health institutions as an incentive payment to their employees. Performance-related pay can also be used to pay groups and organizations

To decide which payment system fits the most with their conditions, each hospital has to take into consideration many factors, such as the characteristics of their employees (including medical and non-medical staff), their internal and external environment - including economic, social and demographic issues - and their own management system.

4. Nursing management

4.1 Nursing care models

Nursing care models may vary from one nursing unit to another, depending on the type of patients, care requirements and available resources. Care delivery models focus on the patient and how nursing care services are developed and provided. Other factors affecting care delivery models are nurse clinical decision making, work allocation (workload), communication, and management. There are four components that need to be addressed by a care delivery model (Jones, 2007):

1. Patient needs
2. Patient population demographics
3. Number of nursing staff members
4. Ratio of nurses serving various roles and levels.

Three main types of care delivery models exist, i.e. traditional, non-traditional and emerging. Traditional nursing care models are referred to as total patient care, functional, team and primary nursing. Previous studies by Tiedeman and Lookinland (2004) found out that these models lack the necessary methodological rigor and did not allow conclusions to be drawn about the impact of the model of care delivery on quality of care, cost and satisfaction. Consequently, other care delivery models have been developed to address the changing needs of health care, namely the non-traditional models.

Non-traditional models of care delivery are able to reduce the professional staff in the skill mix and have become a major cost-saving strategy in many organization. These models use various combinations or skill mix of licensed nurses (registered nurses and licensed vocational nurses) and unlicensed assistive personnel (UAP).

The traditional and nontraditional models are composed of a division of labor, efficient use of time to perform nursing care tasks, costs, and training. Both models use a mix of licensed and unlicensed personnel and most traditional and nontraditional models are patient-centered. Moreover, in specific patient populations such as adult critical-care and pediatrics, they use a family-centred care model where the family members with the patient are active participants in planning the care of their loved ones, including a role as direct caregivers.

Emerging models are concepts that are being developed and implemented. One emerging model of care delivery is the acuity-adapted room model, which is patient-focused care that brings care to the patient rather than bringing the patient to the care. In this model, the room changes around the patient instead of the patient changing rooms, which is possible because each private patient room is equipped to treat all levels of care. For example, a joint research project conducted by a product manufacturer and a university health-care system produced a cardiac universal bed and used in the acuity-adapted rooms (Jones, 2007). The acuity-adaptable rooms (also called universal bed or cardiac universal bed model) are appropriate for specific patient populations, such as coronary critical care and step-down units combined into acuity-adaptable rooms. Therefore, they can eliminate time-consuming and costly patient transfer activities. Moreover, the nursing staff works as a team and is adaptable in scheduling to correspond to the patient acuities (Jones, 2007). A new variation of the acuity-adapted room model has been developed where the acuity-adapted room within the health-care setting is designed for the patient to be physically closer to the nursing staff.

Another emerging model is the Partnership Care Delivery Model. The AACN (AACN-Colleges, 2004) has advanced the role of clinical nurse leader. It requires the unit nurse leader to be prepared as a generalist at the master's level. The clinical nurse leader (CNL) provides care in the model, which understands and interacts with the whole continuum and in partnership with all the disciplines (Tornabeni, Stanhope, and Wiggins, 2006). Another emerging model example is the Transforming Care at the Bedside (T-CAB) which focuses on achieving outcomes associated with work reliability, patient centeredness, increased value (including reducing paper work), and work force vitality. This model pulls together an interdisciplinary team to assess problems, to develop, and to evaluate creative approaches for addressing the problems. The interdisciplinary team then disseminates solutions to other areas within the facility (Mason, 2006).

A model for critical care delivery in intensive care units has also emerged. This model is a practice model based on multidisciplinary group practice using the team approach, led by a fulltime critical care–trained physician in the intensive care unit 24 hours per day. Moreover, this model is based on its ability to minimize mortality and to optimize efficiency while preserving

dignity and compassion for patients and the nursing workloads are defined by hours per patient day or the nurse-to-patient ratios.

No matter what model of care is used, the nursing education and practice must be client-(patient)-centered, generate quality outcomes, and be cost-effective (AACN-Colleges, 2004 cited in Jones, 2007, p.285). Outcome-system-centered measures are skill mix (RN, LPN, UAP, and contract), nursing care hours per patient day (RN, LPN, and UAP), and practice environment measures that include staffing and resource adequacy (Kurtzman & Kizer, 2005 cited in Jones, 2007, p.285). Moreover, the quality and safety of the nursing services provided are tied to the professional nurse and patient ratios and/or the nurse/patient index.

4.2   Nursing care performance

The goal of health-care organization is providing safe, high-quality patient care and to achieve this goal, the organization depends on the teamwork of its personnel. To most health-care organizations, the quality of nursing care is of strategic importance. A nursing quality program must guarantee that standards are in place (quality assurance), however more importantly, it must include a focus on performance improvement geared toward achieving nursing sensitive indicators as well as patient satisfaction and medication safety (Jones, 2007). Quality improvement models (such as the Nolan model for improvement, Six Sigma and others) serve as frameworks for diagnosing and finding solutions to performance problems. Often, organizational leadership sets the choice of a model.

The nurse manager is responsible for planning, organizing, directing, and coordinating the activities of the nursing personnel. Nurse leaders are important to hospital-wide quality initiatives especially in improving nursing quality. Nursing can improve processes directly related to the practice of nursing. Nursing quality improvement programs are designed to enhance patient care through systematic assessment and improvement of the quality and appropriateness of care rendered. Opportunities to improve patient care through evaluation of clinical and operational performance measures are integrated into ongoing management processes

Another important responsibility of the nurse manager is monitoring and evaluating the performance of personnel, a function called controlling,

which requires interactive contact with employees. This includes personnel evaluation, discipline, and behavior modification. Successful nurse managers require knowledge and skill in interpersonal relationships to enhance the performance of employees.

As mentioned above, to achieve its goal, the health-care organization depends on the teamwork of its personnel. Accordingly in order to lead and manage effectively, a nurse must be able to build a strong teamwork. The delivery of health care is a team activity, which involve professionals and unlicensed personnel from a variety of disciplines. The traditional management models emphasizing individuals in the workplace and more likely to value individual performance. However, the new management strategies emphasize the importance of self-organizing teams and the value of group activity. In the complex world of health-care delivery, each individual's participation as a team member is a requirement. Failure to work as a team creates fragmentation of patient care.

Performance appraisal is a formal evaluation of an employee's performance. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) requires regular performance appraisals, and most health-care organizations offer them annually. Nursing administration has a responsibility to conduct regular oversight and evaluation of performance, whether or not they are required annually. The objective of a performance appraisal is to provide opportunities for personal and professional growth and to ensure the quality of nursing care (Creasia & Parker, 2001 cited in Jones, 2007). In general, the process is intended to clarify how well the employee is performing the requirements of the job. A job description often provides the baseline or minimal performance criteria and additional standards may be used to evaluate employees, depending on the setting. The nursing standards are the standardized set of performance measures designed to assess the effect care nurses have on patient health and safety outcomes. For example, in a clinical setting, the standards or benchmarks for job performance often include the American Nurses Association (ANA) clinical standards and the JCAHO patient safety guidelines.

An important factor in nursing care performance is ongoing feedback and correction. The employee should not be made to wait for an official evaluation date to receive this type of feedback. Ongoing feedback can

help motivate the employee toward outstanding performance. Another factor that can influence the nursing care performance is the nursing workload. As evident in research studies, daily staffing is affected by the workload assigned to the scheduled nursing staff.

5.   Logistics management

The essence of logistics management at the operational unit lies in managing the necessary medical and non-medical equipment needed at the level which is adequate for a given service, and in ensuring continuous availability, or availability in a timely manner. In this regard, selection of the appropriate technology itself is critical. When rapid growth of new medical technologies exists in the context of limited budgets, health technology assessment should be carried out by the hospital. By definition, health technology assessment is a multiscientific and interdisciplinary activity delivering input for priorities and decisions in the health care system in relation to prevention, diagnostics, treatment and rehabilitation (Sigmund et al., 2007).

All levels in the hospital and health care system make decisions on the use of technology. They frequently include a unification of complicated medical, patient-related, organizational and economic information in a context where there may also be ethical problems. Therefore, providing input for the decision-makers is highly dependent on the interaction, division of labour and cooperation between professionals in the health care system, the research environment and the political decision-makers and their staff. Moreover, decisions must be made based on evidence where all relevant circumstances and consequences are systematically scrutinized using scientific methods.

5.1   Planning and maintaining logistics

*A sound logistic plan is the foundation upon which a war operation should be based. If the necessary minimum of logistic support cannot be given to the combatant forces involved, the operation may fail,or at best be only partially successful. —***Admiral Raymond A. Spruance (Department of Navy, 1995)**

The managers of operational units in hospital have the responsibility to manage logistics, especially in planning and maintaining logistics. These

two activities are important functions of operational unit managers, but often are poorly performed.

Planning Logistics. The operational unit in the hospital has the responsibility to produce some products according to specific quality standards. To meet those quality standards, an operational unit needs high quality inputs and a proper transformation process. Logistics activities can assure that the work unit will receive high quality inputs and provide support so that the transformation process runs properly. When logistics fail to support an operation all else becomes irrelevant (Department of the Navy, 2008). Some operational units in hospitals plan their logistics better than others. These hospitals gain some advantages such as better customer satisfaction, minimizing inventory, and optimizing asset usage in order to reduce operating costs.

The manager of an operational unit in a hospital has to plan logistics activities properly. These activities include activities in determining needs, procurement, recording logistics activities, and maintaining medical and non-medical equipment. Proper logistics planning requires the managers to comprehend different skills, such as forecasting, leadership, and technical skills. Without these skills, low performance commonly results. For instance, some managers use the rule of thumb "10% increase from the previous year" in determining the needs for medical equipment and medical supplies for the coming year. This indicates poor logistics planning (i.e. not using evidence) and inadequate forecasting skills. Ideally, managers should ask the following questions: How much medical and non medical equipment should be added to increase revenue? How many drugs should be bought for buffer stock? How many items of medical equipments require repair? These are questions that can be answered properly if the managers have high-level capabilities in forecasting.

Logistics planning also requires data support. Data will be analyzed and used to develop logistics plans. Often, data are available, but rarely analysed or used by managers to obtain useful information for logistics planning.

Maintaining Logistics. The second important responsibility in managing an operational unit is maintaining logistics. The kinds of issues that need to be addressed in relation to these activities are: (1) medical equipment

may not be maintained properly, (2) the budget for maintenance activities is low, (3) there is a lack of skilled persons to maintain the medical equipment. These problems are commonly seen in public hospitals. As a consequence of the problems, medical and non-medical equipment cannot be operated in an optimal way, and the equipment have shorter life spans in technical usage. This situation will increase costs and reduce the effectiveness of the operational unit, leading to loss of competitive advantage for the hospital.

The core problem in maintaining logistics is the lack of a maintainance policy. This policy should guide the manager in developing maintenance activities for medical and non-medical equipment. Without this policy, managers in the operational units cannot make decisions on what, how, and when the maintenance activities should be performed.

Involvement of the hospital board of directors in developing a maintenance policy is crucial. Their participation will strengthen attention to maintenance logistics, and improve commitment for maintenance activities.

In addition, good coordination for maintaining logistics among the operational units in a hospital are required. Usually, maintaining logistics in hospitals is performed by a unit such as the Instalasi Pemeliharaan Sarana Rumah Sakit (IPSRS) or Maintenance Department. This department obtains orders for maintaining medical and non-medical equipments from the other operational units. The work units depend on the maintenance department, and in turn, the maintenance department also depends on other work units. Consequently, between the work units and the maintenance department there should be good coordination.

5.2 Drug Inventory Management

Drug therapy is inherent in most health care processes, and is a major issue for hospitals, contributing 40%-50% of the total hospital revenue. In the hospital, drugs are managed under the pharmacy department. The key problems related to drug management at the operational unit are drugs shortage and expired drugs. Some factors that contribute to drugs shortage are: (1) unavailability of raw and bulk materials, (2) manufacturing difficulties and regulatory issues, (3) changes in product formulation or manufacturers (4) problems in the inventory practices, and

(5) unexpected increases in demand and shifts in clinical practice (Fox et al., 2009). Fox et al. (2009) further recommends that hospitals adopt a systematic process to solve problems in drug shortage (see figure 1).

Expired drugs are the second problem in the pharmacy department leading to increases in costs. This problem frequently occurs because the pharmacy department purchases more drugs than the actual quantities required.

Figure 39. Process for decision-making in the management of drug product shortages (Source: Fox et al., 2009)
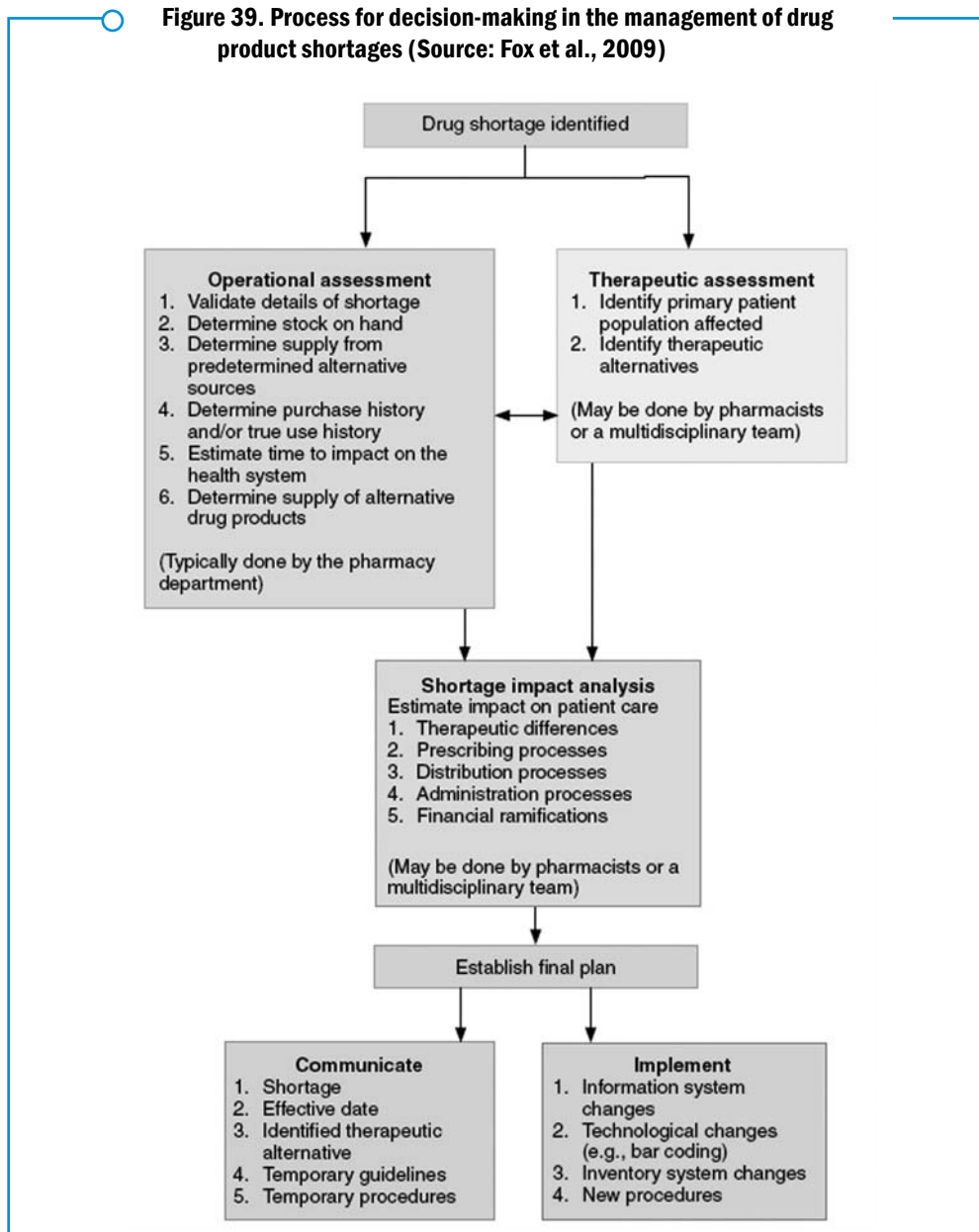
The problems of expired drugs can be eliminated through better drug inventory management. Drug inventory management involves developing a drug formulary, determining a target inventory, and determing the level of safety stock. The drug formulary is a very important tool to guide the manager of the pharmacy department in order to manage their drug inventory. Therefore, the manager of the pharmacy department should encourage the hospital medical committee to lead the development of drug formulary.

Determining a target inventory is another decision that should be taken in managing the drug inventory. The manager of pharmacy has to determine what is the highest appropriate level for the drug inventory. This target inventory will set the upper limit for drug quantities that should not be surpassed and based on this, the probability of expired drugs can be minimized.

In addition, the manager of pharmacy should also determine the level of safety stock. Safety stock determines the minimum level of the drug inventory that will assure that service levels can be achieved. The minimum level of the drug inventory should guarantee availability of drugs, but will also decrease the probability of expired drugs and also contribute to the efficiency of drug management.

6.   Planning and budgeting

To create positive experiences for patients during their care processes, clinical as well as supporting managerial activities need to be planned, organized and implemented in the most effective and efficient manner. Without proper planning, good strategy remains as a strategy, but not translated into actual performance of services or hospitals. Mankins and Steele (2005), in their review of high performing organizations stated that the biggest factor affecting performance loss was operation (program) planning (23%), followed by budgeting and procurement (21%).

6.1   Planning

"From year to year, we keep the same activities in our plan but we increase the volume of activities and revise the targets based on past achievements. The budget thus increases around 10-15% annually". At the operational

level, planning is commonly seen as a 'routine' activity carried out to cover the routines by any organizations. This mindset leads the unit to conduct "business as usual" and to treat planning as something that 'those behind the desks should do'. In their minds, the health professionals providing services at the operational level 'do not need to know' and don't need to be involved in planning.

This very limited understanding of planning can no longer be considered valid for the following reasons:

- Activities at the microsystem level are geared towards delivering the best care for patients in the most effective way. Thus, performance at the microsystem level is primarily measured against clinical indicators.
- As a consequence, all activities, whether clinical or managerial activities, need to be integrated into the process of supporting or undertaking clinical activities.
- Regardless of who is in charge of planning at the hospital and operational level (whether persons with clinical or managerial background), planning is commonly seen as a managerial tools even at the operational (clinical) level. As a result, it is not given adequate attention by clinicians working at the operational level, and they are rarely involved.
- Finally, and most disturbingly, this leads to planning as a set of separate activities unrelated to the achievement of the necessary level of clinical performance and targets.

This section deals with planning and budgeting activities existing at the operational level, as part of the larger process occurring at the organizational level. The activities are interconnected with the organizational level in two ways: as part of bottom-up planning as well as operationalizing the organization's strategic plan.

The following are characteristics of a good operational or program planning process:

- Analytical, to reflect the overall analytical thinking process from problem formulation up to plausible intervention in the process of planning
- Lead to rational workplan and budget, in order to turn planning into real actions

- Facilitate ownership, under the condition that the planning process is carried out involving key stakeholders
- Involve presentation, communication and marketing, in order to gain high commitment and to mobilize necessary support in implementing the activities
- Facilitate negotiation, based on available information in the planning document
- Facilitate management of implementation, by anticipating barriers and supporting factors in the planning process as well as identifying potential risks to achieve the objectives
- Facilitate monitoring and evaluation, by applying methods and indicators stated in the planning document

There are many approaches used for operational planning, such as goal-oriented project planning (ZOPP), project cycle management, the Logframe approach and the program planning matrix. For this book, we prefer to use a generic term - program planning matrix – which is applicable for the design and redesign of program or projects at different levels (such as sector, country program, province/district, hospital, units etc.). In Indonesia, the program planning matrix has been adapted into what is called Rencana Anggaran dan Satuan Kerja (RASK).

Program planning is a team task involving an iterative process and requiring effective team work. Prior to developing the program, it is important to conduct a situation analysis involving relevant stakeholders. To facilitate the process, different analytical elements exist in program planning. These are problem analysis, stakeholder analysis, objective analysis, identification of risks and selection of a preferred implementation strategy (AusAID, 2000). Once the situation analysis is completed, the program planning matrix is then developed. Each stage is described below.

Analysing the situation

Planning must be carried out with a view to understanding current situations that will need to be improved later. Situation analysis integrates four analytical components to guide the process, which are not necessarily applied in sequential order. These are:

■ Problem analysis: Problem analysis involves identifying the main problems and determining the cause and effect relationships between these problems in order to find the root causes. Once the problem tree is constructed and accepted by the group, possible solutions are sought.

■ Stakeholder analysis: After describing the main problems and the root causes, stakeholder analysis gives answers to the questions: "whose problem is this?" and "who will benefit?". The intention is to better address impacts of the programs, and to anticipate conflicts of interest and strategies to address these conflicts into the program planning. The main steps in stakeholder analysis include:

- Identifying the main target group and broader group of stakeholders
- Exploring their roles, interests, power, positions and commitment
- Investigating the cooperation and conflict in the relationship among the stakeholders
- Accommodating the findings into program planning

■ Objectives analysis: Following problem-tree and stakeholder analysis, an objective tree is constructed using a similar structure as in the (revised) problem-tree with the difference of changing the problem statements (negatives) into objective statements (positives). Instead of showing the cause and effect relationship between problems (such as in problem-tree), the objective tree demonstrates the means-end relationship between objectives, i.e. achievement of objectives at one level would lead to attainment of objectives at the next level .

■ Technical strategy selection: In selecting strategies, questions are posed in relation to the following aspects: comprehensiveness vs selectivity of the program, the effective combination of interventions to achieve the desired benefit, resource implications, participatory, technical feasibility, sustainability, institutional learning, environmental impact and alignment with broader priorities.

Developing program planning matrix

The link between situation analysis and program planning is created by using the objective tree to start filling in the first coloumn of the program planning matrix, i.e. the program description. Objectives at the top of the tree should guide the development of goal and purposes. Going further

down the objective tree, the statements are used for writing component objectives and output statements in the program planning matrix. The following figure illustrates the scheme, which will be fed to program description in the program planning matrix.

Figure 40. Planning Matrix
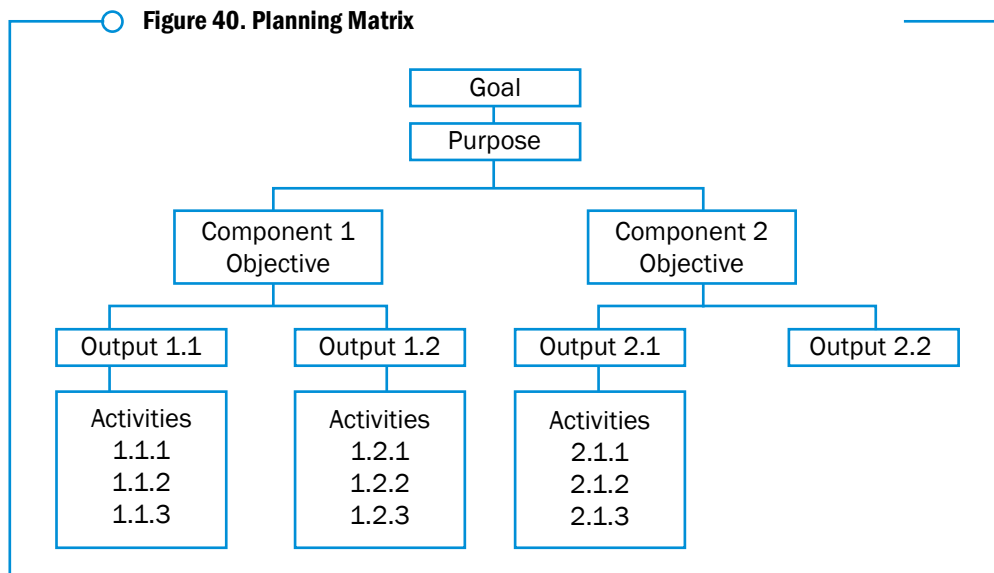
The structure of program planning matrix provides a "summary" of the program (AusAID, 2000). It described the program goal, purpose, component objectives, output and activities along with their indicators, means of verification and assumptions. Horizontally, the matrix provides the framework for program monitoring and evaluation, while in the vertical logic, the means-end relationships (from activities up to goal) as well as contingencies are outlined for the program manager. The matrix and its sequential steps to complete the matrix are shown below.

Figure 41. Matrix sequential steps

Project Description	Indicators	Means of Verifications (MoVs)	Assumptions
1. Goal	10. Indicators	11. MoVs	
2. Purpose	12. Indicators	13. MoVs	9. Assumptions
3. Component objectives	14. Indicators	15. MoVs	8. Assumptions
4. Outputs	16. Indicators	17. MoVs	7. Assumptions
5. Activities	Milestone spicified in activity schedules and scope of services	Work plan and management reports on physical and financial progress	6. Assumptions

The program description provides a narrative summary of what the project intends to achieve (goal, purpose, component objective, output) and how (activities). To implement the activities, resources such as personnel, equipment, materials etc. are required. However, these inputs are not included in the program planning matrix. The next step to be completed is the statement of a condition that could affect succesful implementation of activities, but difficult to be controlled. The condition can be written as a positive statement (assumption) or as a negative statement (risk). Indicators refer to the information needed to indicate the progress toward meeting the objectives, including the target to be achieved. Finally, means of verification specifies the the expected source of the information to be collected. It describes the method, person in charge and frequency of data collection.

Once the program planning is considered adequate and acceptable, this can then be used to prepare the actual program implementation and resources needed.

6.2   Budgeting

At the operational level, those who are engaged in delivering care to the patients should also be in the best position to be involved in planning and budgeting. Proper budgeting ensures that the level of resources needed to support all activities important to care delivery processes are available when in need. Failure to develop appropriate budgeting may lead to problems causing discontinuity of care which in turn results in poor outcomes.

Budgeting is a quantitative expression of a program planning (or plan of action). It functions as a planning document identifying the revenues and resources needed for an organization to achieve its goals and objectives, but also as a control document that allows an organization to monitor the actual revenues generated and its use of resources against what was planned. The budget is usually stated in monetary terms and covers a period of one year (Cleverley, 1997).

The term budget is often used as if there is only one type of budget. In fact, most health care organizations develop four interrelated budgets, i.e. statistics budgets, operating budgets, cash budgets and capital budgets.

Their descriptions are below (Zelman et al., 1998):

- **The Statistics budget** is the first budget to be developed, and identifies the amount of services that will be provided, usually listed by payor type.
- **The Operating budget** is a combination of two budgets developed using the accrual basis of accounting: the revenue budget and the expense budget. The operating budgeting process consists of two parts: budget setting, in which budgets are established prior to the beginning of each fiscal year, and budget management, in which budgets should be monitored and controlled (Clark, 2005). In the operating budget, the bottom line is the net income for the period. While the revenue budget (consisting of net patient revenues and non-patient revenues) is a forecast of the operating revenues that will be earned during the budget period. The expense budget lists all operating expenses that are expected to be incurred during the budget period.
- **The Cash budget** represents the organization's cash inflows and outflows. The cash budget is the amount of cash available at end of the period. It also details when it is necessary to borrow to cover cash shortages and when excess funds are available to invest.
- **The Capital budget** summarizes the anticipated purchases for the year. In outpatient facilities this may be relatively small, however in large systems with inpatient facilities it may worth millions of dollars.

The budget needs to be executed properly in order to meet the expected the year-end financial results and targets. Among other steps, Clark (2005) describes the following steps as best practice in budgeting: setting accurate budgets, establishing accountability, monitoring variances and managing expenses. For effective budgeting, accountability and responsibility should be aligned, not separated. For example, the head of a hospital department or division incurring certain expenses should also be held responsible to make sure that the budget plan is being complied with. Separating accountability and responsibility may lead to the following problems (Levy, 1992):

- Conflict between supply officers and users
- Frustrations of the users due to delays and difficulties in getting justified additional supplies
- Supply officers will also be frustrated since they have to comply to

the budget over which they have very little control and frequently, the matron or senior member of medical staff will approve purchases, overriding the effort of supplier to control usage
- Users will ask for the same level of supplies in low demand periods, to offset the periods of high demand. As a consequence, this increases the amount of money is tied up in dead stock and also losses, which may have to be discharged.
- Generally, users are not cost-conscious, because users are not being held accountable for expenditure, and are not motivated to use resources efficiently.

In the context of a microsystem in the hospital (such as outpatients, inpatients, laboratory, radiology etc), the development of bottom-up planning requires the operational units to develop their budget, taking into account the following considerations (Levy, 1992):

- placing control where it should be and where it could be effectively exercised
- educating staff at the operational units to become cost conscious
- reducing arguments and frustration faced by the staff, and
- cutting down expenditure on supplies.

To exercise budgeting at the operational level, certain steps are required. First, it is crucial to determine which items to be included in the budget. Stock levels for each item have to be established in order to be used on base stock principles. Any excess over the base stock will be considered as a temporary accretion and any shortage will also be considered as temporary and irregular. When abnormalities are noted, these need further investigation and control. Operational unit budget can contribute to improve the hospital's regular annual budget as the requests should originate from the operational unit where managers are held accountable for their expenses (Levy 1992).

The budgeting phase of operations involves a translation of product-line decisions made earlier into a set of resource expectations. There are two primary purposes for this. First, management must ensure that there will be sufficient cash flow to maintain financial solvency. Second, the resulting budget functions as the basis for managerial control. If budget expectations are not met, managers must identify the causes

and take corrective actions. A budget or set of resource expectations can be thought of as a standard costing system. The budget represents management's expectations of how costs should behave, given a certain set of volume assumptions. It is essential to keep in mind that it is the forecasted or budgeted costs of a product that are of the greatest interest to management. Historical costs are useful, but only if those costs indicate future costs, or provide a benchmark against which budgeted costs can be compared (Cleverley 1997).

The process of translating product-line decisions into exact and specific sets of resource expectations involves five basic steps. The main output of this process is a series of departmental or activity center budgets, that explicate what costs should be during the coming budget period. The steps are (Cleverley 1997):

1. Define the volume of patients to be treated in the budget period by case
2. Define the standard treatment protocol by case
3. Define the required departmental or activity center volume
4. Define the standard cost profiles for departmental or activity center output, and
5. Define the price to be paid for resources.

According to Clark (2005), there are two main categories of best practice budgeting principles that can be adopted by a hospital. These are practices associated with budget setting and budget managing processes.

Budget setting principles:

- The budget has to be based on the five-year strategic plan in order to understand capital needs and gain buy-in, and identify managerial support for achieving budget targets.
- Management needs to collaborate with the internal organization, which means the hospital budget should be based on the mission, strategy and financial plan of the hospital and entire health system.
- The budget process should "project conservative volume with physician involvement". In order to make accurate budget projections especially in relation to patient volume and revenue, the hospital should collaborate with its physicians.

■ The CEO and senior management should "present and own the budget", acting as a unified team which owns the final budget and is accountable for achieving the targets. The budget is a central management function, affecting the whole hospital - the CFO and the finance department do not 'own' the budget.

■ Management should "use comparative benchmarks annually". To help setting appropriate costs per unit of service and productivity standards, hospitals should perform external cost and productivity benchmarking annually, in order to find cost savings opportunities, and to identify areas to fill the budget gap.

■ Department managers should "set accurate, high-performance department budgets", and should be given their own budget targets by the finance department based on historical performance, external benchmarks, and overall budget goals, and not vice versa.

■ Management need to "leverage the finance department". The finance department should function as a support and resource to the operational vice presidents by providing financial data, variance reports, operating statements, and others, and should be responsible for providing mandatory budget, general finance, and cost accounting training and education to all department managers and directors.

Budget managing principles:

■ A culture of accountability should be established. Senior management should clearly determine how to reach the budget targets and ensure that meeting the budget is not simply a goal but a managerial requirement.

■ Managing expenses: department managers should primarily focus on expenses rather than gross revenue.

■ Rolling budgets are important in re-forecasting year-end results. If early in the year managers exceed budget expectations, then they should hold to those early gains throughout the year. Moreover, monitoring costs against external benchmarks is most practical and has higher impact on an annual rather than quarterly basis.

■ Using flex budgets: department budgets should be flexed, tied back to the hospital's budget, and incorporate volume-adjusted staffing grids that are based on standards of productivity and costs per unit of service".

- Variances should be monitored and they require corrective action plans.
- Evaluating new position requests: the approval process for hiring new FFEs should include the CEO (or COO), CFO, vice president, and budget director. The process should ensure that labor costs per unit of service do not increase and that they stay within the benchmarks.
- Use a balanced scorecard. When reviewing management performance, cost containment and cost reduction should be balanced with improving quality as well as patient and employee satisfaction.
- Give management rewards and recognition. When management exceeds budget expectations based on a balanced scorecard then this should be rewarded and recognized.

Summary of module content

This part reflects the complexity in designing, implementing and evaluating a clinical management system. In order to be effective, the care processes need to be supported by effective management functions relevant at the microsystem level. These functions ultimately linked to the functional management system at the organizational level which is described in the next chapter.

A reflective question

Review the following aspects of clinical management system at your hospital in order to describe the current situations and to what extent that these aspects are already taken into account at the microsystem level:

- Clinical leadership
- Culture
- Organizational support
- Patient focus
- Staff focus
- Interdependence of the care team
- Information and information technology
- Performance patterns

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Chapter Six
Hospital Business Functions: Managing for Sustainable Growth

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Overview of module:

This chapter addresses the managerial issues at the macro system level to ensure the sustainability of core business within the hospital. It explains how to measure hospital achievement in terms of efficiency in service improvement, in financial terms. It gives an understanding on the linkages between the micro and macro system levels within the organization (hospital).

This module consists of five main parts of business and management functions: production and operation, marketing, finances, accounting, and human resource management. The first part starts with marketing for the hospital which explains the concept of Segmenting, Targeting, and Positioning (STP), marketing mix, and marketing related to the hospital context. Accounting for hospitals discusses the process of preparing financial reports and the usage of accounting information to support decision making. Financial management focuses on financial statements, financial ratios, and capital budgeting.

The discussion will continue to human resources management which gives information on job analysis, recruitment and selection, performance appraisals, reward systems, and training & development. The final sections of the module include operations management and logistics in hospital describing the principles of operations management, procurement, physical asset management, and service quality improvement, and how to manage information to support decision-making and reporting.

Key readings linked to the module:

The following list includes additional learning resources to be used for further reference in relation to the module. Issues are further explored in these readings, such as:

- How does the hospital determine tariffs and promotional policy?
- What kind of marketing research should be done to support problem-solving?
- Are we (consciously or unconsciously) thinking of hospital efficiencies while delivering the service?
- What indicators can we use to measure hospital performance related to the business function?
- What kind of system improvement is needed to ensure quality of services?

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Learning objectives:

After completing this module, you should be able to:

1. Identify problems related to hospital business functions.
2. Appraise the performance of each hospital business function.
3. Analyze business functions problems and recommend solutions to handle these problems.

Content

A.   Marketing for Hospital

A.1. Introduction

The concept of marketing applies for all organizations which deliver a manufactured item or a service as their final product. The marketing concept suggests that a company can gain profit from identifying and satisfying consumer needs (Donovan & Henley 2003). This concept also applies for hospitals as actors in the health care industry, organizations which have a service as a product. In Indonesia, hospital marketing is a new concept for some hospital managers, especially government hospitals. Most of these managers do not know that they are conducting marketing activities in their daily work - for example, the decision about setting hospital tariffs is a marketing decision - but most of them are not aware of it, since they think marketing only involves advertising.

According to the American Marketing Association (cited in Donovan & Henley, 2003), marketing is "the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods and services to create exchanges that satisfy individual and organizational goals". From this definition we can conclude that marketing is the tactics used by companies to sell their products and services and also a way of doing business that

creates exchanges that satisfy individual and organizational goals. These exchanges are known as the basis of the marketing concept. The marketing concept suggests that the company can gain profit from identifying and satisfying consumer needs. This means that the company has to focus on maximizing consumer satisfaction, so that their consumers will repeat purchase and provide favorable word of mouth advertising (Donovan & Henley, 2003). Kotler and Roberto (1989) suggests that "the marketing concept holds that the key to achieving organizational goals consists in determining the needs and wants of target markets and delivering the desired satisfactions more effectively and efficiently than competitors. In the true sense, marketing means being sensitive to, and responding to the needs of people as they perceive them" (MacStrive, 1977).

In the same way that other types of companies need to address these issues, hospitals or health organizations also need to undertake marketing activities. Until recently, hospitals or health organizations have tended to ignore marketing concepts, either unconsciously or deliberately. For hospital management, in the past, the most important groups to serve have been physicians, community leaders and financial organizations (MacStrive 1977). However, now, hospital or health organizations must serve not only these traditional groups, but must also identify and satisfy their patients, clients, public, community, other hospital/health organizations, etc. Consequently, whenever a health organization finds itself in a position where it wishes to alter an exchange relationship with physicians, patients, supporters, employees, regulatory agency etc., the concepts of marketing may be used to its benefit (MacStrive 1977). Since exchanges take place constantly between the hospital/health organization and its group of customers, it may be argued that all hospital or health organizations are engaged in marketing, whether consciously or not.

A.2. Segmenting, Targeting and Positioning of Hospital Market

An important element of each marketing strategy is market segmentation and the identification of target markets. They are the basis for determining any particular marketing mix (Drecklies 2001). If the organization has already decided that it is necessary to alter its exchange relationship with some of their groups of customers, management needs to be able to predict how this will affect different groups within its customers. To make its analysis of actual and potential exchanges more effective, management

can divide actual and potential groups probably into distinct, homogenous segments. As a result, this will result in targeted strategies for achieving more effective and efficient exchanges (MacStrive 1977).

A market segment is simply a distinct group of actual or potential constituents that may become a target for some objective by the organization. The importance of market segmentation results from the fact that buyers of a product or a service are not homogenous. The basic understanding of market segmentation refers to subdividing a market along some commonality, similarity, or kinship. In other words, every buyer has their own individual needs, preferences, resources and behaviors. Since it is nearly impossible to cater for every customer's individual characteristics, marketers group customers into market segments by the variables they have in common. These common characteristics allow for developing a standardized marketing mix for all customers in this segment. The objective of segmentation is the concentration of marketing energy and force on the subdivision (or the market segment) to gain a competitive advantage within the segment (Drecklies 2001; Thomas 2007).

For instance patients may be classified by income level, religion, gender, etc. Potential patients also can be segmented into groups by income or education level, type of health insurance coverage, proximity to the hospital. The basis for determining segments should be the importance if the similarities within a group and the difference among groups. For example, in fund-raising, a hospital can choose to approach the wealthy groups first and use different messages to motivate prospective givers who have been patients. Alternatively hospitals can also focus on members of a given religious denomination. There is no right formula for dividing a market into segments. The number of segments and the factors on which segmentation is made will be determined by the purpose of dividing up the market (MacStrive 1977).

As stated before, market segmentation and the identification of target markets, are important elements of each marketing strategy. Experts suggest the following steps (Drecklies 2001):

■ **Market Segmentation**
1. Identification of customers' needs and market segments
2. Develop profiles of resulting market segments

■ **Identification of Target Market**

3. Evaluation of attractivity of each segment
4. Selection of target segments

■ **Positioning**

5. Identification of differential advantages in each segment
6. Development and selection of positioning concepts

■ **Marketing Planning**

7. Development of a marketing mix for each segment according to the chosen position

The reason for focusing on a specific target market by using marketing segmentation approaches is that you can fine-tune the whole marketing mix to provide some group of potential customers with superior value. An organization can do a better job meeting customers' needs, and builds a competitive advantage by differentiating the marketing mix. When this happens, target customers view the organization's position in the market as uniquely suited to their preferences and needs. Furthermore, because everyone in the organization is clear about what Position it wants to achieve with customers, the Product, Promotion, and other marketing mix decisions can be blended better to achieve the desired objectives.

Marketing managers always want their customers to see their organization's offering as unique. This is not always possible. There are many barriers, including imitators who may come along and copy the organization's strategy. Or even if an organization's marketing mix is different, for consumers, the firm's product may not be that important in their lives, and they may not know or care. Nevertheless, in looking for opportunities, it is important for the marketing manager to know how patients view the organization's offering. It is also important for the marketing manager to have a clear idea about how he or she would like customers to view the firm's offering. This is where another important concept, positioning, comes in.

Positioning refers to how customers think about proposed and/or present brands in a market and is especially important when competitors in a market appear to be very similar. According to Kotler (1988, cited in Augustine et al., 1992), "positioning is the act of designing the company's

image and value offer so that the segment's customers understand and appreciate what the company stands for in relation to its competitors". A marketing manager needs a realistic view of how customers think about offerings in the market, because without that, it is hard to differentiate. Concurrently, the manager should know how he or she wants target customers to think about the organization's marketing mix.

Hospital positioning can be viewed as a strategic tool (a concept and a process) that is used by the hospital to create specific perceptions of their unique attributes and benefits in relation to their competitors. In positioning, hospital managers analyze not only a subject hospital's position, but also the positions of the competitors' hospitals. If hospitals are able to develop and maintain their desired positioning in their respective markets, then they will have a better chance for profitability in the coming years (Augustine *et al*., 1992).

A.3. Marketing Mix

In conducting marketing activities, we need to understand marketing mix with its basic 4 elements known as four Ps. The marketing mix principles are controllable variables which have to be carefully managed and must meet the needs of the defined target group. All elements of the mix are linked and must support each other.

1. Product: In hospitals, the products are healthcare services such as inpatients, outpatients, pharmacy and other medical activities
2. Price: Price is the amount that are paid by the person who received hospital/healthcare service or by a third party that oblige to pay such as an insurance company
3. Place: Place refers to the place where health care services are provided, and considers several aspects such as distribution channels, market coverage, fast and accurate procedures, pleasing and relaxing environments, etc
4. Promotion: Promotion is associated with how the hospital's potential consumers know about all the services provided by the hospital

Other experts have extended this listing into 7 Ps, a listing which is more suitable and useful for the service industry. The additional 3 Ps are (Booms & Bitner, 2007):

1. People: All people, directly or indirectly involved in the consumption of a service are an important part of the extended marketing mix. Often knowledge workers, employees, management and other consumers add significant value to the total product or service offering.
2. Processes: Procedures, mechanism and flow of activities by which services are consumed (customer management process) are the essential element of marketing strategy.
3. Physical evidence: The ability and environment in which the service is delivered, both tangible goods that help to communicate and perform the service and intangible experience of existing customer and the ability of business to relay that customer satisfaction to potential customer

The first two additional Ps (People and Process) are explicit factors and the third one (Physical evidence) is an implicit factor.

A.4. Relationship marketing

Relationships are an integral part of social and political life. The development of relational concepts that can be used to understand and analyze marketplace behavior is especially relevant to the marketing of services because of the intangible nature of services, the extent to which they involve the customer in the producing organization and the long term formal and informal ties that they establish with their customer (Czepiel 1990). Therefore, the marketing of services is especially sensitive to the relationship between customer and suppliers. Service marketers must adopt the statement by McCallum and Harrison (1985 cited in Czepiel 1990) "service encounters are first and foremost social encounters" if they are to truly understand the underlying bases of their businesses (Czepiel 1990).

Relationship marketing is "a strategy that entails forging long-term partnership with customers". Companies can build relationships with customers by offering value and providing customer satisfaction. Then companies can benefit from repeat sales and referrals that lead to increases in sales, market shares and eventually profits. Costs fall because it is less expensive to serve existing customers than to attract new ones. Moreover, customers also benefit from stable relationships with suppliers. Customers

will be loyal to companies that provide them greater value and satisfaction that they expect from competing companies. A sense of well-being occurs when a customer establishes an ongoing relationship with a provider such as a physician, bank, hairdresser or accountant. Then, the social bonding takes places between provider and customer involves personalization and customization of the relationship (Hair et al., 1999).

Typically, hospitals/health organizations let their products - the delivery of health services - speak for themselves. However, nowadays, in order to survive the competition, hospitals/health organizations need to consider customer satisfaction. The organization which focuses on clients, needs to look at its products - hospital patient days, physician visits, hours of education, immunization shots, etc. - not as a specific unit of services but in term of what utility or benefit the client derives from the services. It must put itself in the patient's shoes long enough to realize that people seek health care to relieve pain and anxiety, to achieve better personal and social functioning, become more attractive, etc. Such organization focuses these patient utilities as well as the professional quality of its services. Moreover, it needs to continually observe what brings about patient satisfaction, employee satisfaction, and public attitudes, and attempt to improve them when there are problems (MacStravic 1977).

This market-oriented organization will also take into account the total price it ask clients to pay: the time a patient spends before getting an appointment, the time spent in getting to where care is rendered, the time spent in the waiting room, the way patients are treated. Therefore, by focusing on all aspects of price, not only the out-of-pocket costs to the patient (which is often zero under health insurance), then the organization can weigh the cost and benefit relationship as the patient sees it. Comparison between patient perceptions and the knowledge of what patient utilities cost can help the organization motivate prospective patients and design the kind of service that will achieve their desired utilization level (MacStravic 1977). The ultimate outcome of relationship is Loyalty; this is what binds one to another when such constancy seems contrary to self interest (Gilmore and Czepiel 1987 cited in Czepiel 1990).

B.   Accounting Principles and Accounting Management

B.1. Introduction

The financial viability of a hospital is the result of numerous decisions made by a variety of people including care givers, administrators, boards, lenders, community members, and politicians. These decisions eventually result in the organization acquiring and using resources to provide services, incurring obligations, and generating revenues. One of the major roles of accounting is to record these transactions and report the results to interested parties.

This section provides a basic understanding of the major rules of accounting. Different accounting bases are used for financial statements and the cost concept which influences the decision-making process and policies on hospital tariff. One of the major roles of accounting is to record all financial transactions and report these to interested parties. A series of typical transactions at the hospital are recorded in the books and used to produce the four major financial statements: Balance sheet, statement of operations, statement of changes in net assets, and statement of cash flows. With these books, the hospital has a chronological listing of transactions and the balance of each account.

1.   Balance sheet
2.   Statement of operations
3.   Statement of changes in net assets
4.   Statement of cash flows

B.2. Journal

As the transactions of a hospital occur, they are recorded chronologically in a "book" called a journal. Today, this "book" is more likely to be a computer than a journal requiring manual entries. Periodically, these transactions are summarized by account (i.e., cash, equipment, revenues, etc.) in another book, called a Ledger. With these two books, the hospital has both chronological listing of transactions as well as the balance in each account.

```
┌─────────────────────────┐
│    Transaction Occurs   │
└─────────────────────────┘
             ▼
┌─────────────────────────┐        ┌──────────────────────────────┐
│         Recorded        │        │ Information is reported in    │
└─────────────────────────┘        │ the four Fundamentals         │
             ▼                     │ Financial Statements          │
┌─────────────────────────┐        │ - Statement of Cash Flows     │
│  Journal (Chronological)│        │ - Statement of Change in      │
└─────────────────────────┘        │   Net Assets                  │
             ▼                     │ - Statement of Operations     │
┌─────────────────────────┐  ▶     │ - Balance Sheet               │
│    Ledger (by Account)  │        └──────────────────────────────┘
└─────────────────────────┘
```
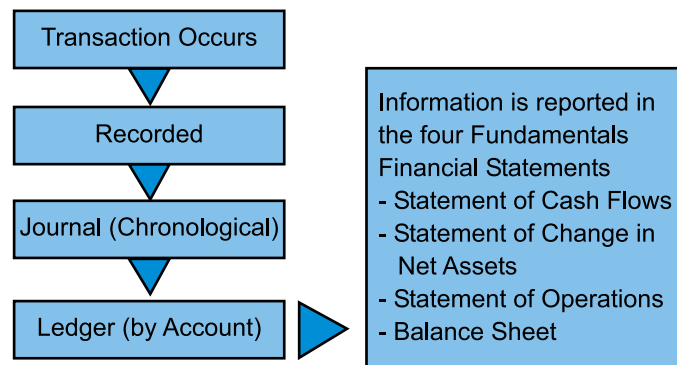
The total for each account in the ledger are used to prepare the four financial statements. Although this procedure is quite simple to conceptualize, ensuring the financial statements are prepared in a timely manner is quite involved.

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                                   ┌──────────────────────────────┐
                                   │ Information is reported in    │
                                   │ the four Fundamentals         │
                                   │ Financial Statements          │
┌─────────────────────────┐        │ - Statement of Cash Flows     │
│    Transaction Occurs   │        │ - Statement of Change in      │
└─────────────────────────┘        │   Net Assets                  │
             ▼                     │ - Statement of Operations     │
┌─────────────────────────┐  ▶     │ - Balance Sheet               │
│ Information recorded In  │        └──────────────────────────────┘
│ the accounting system   │
└─────────────────────────┘
```
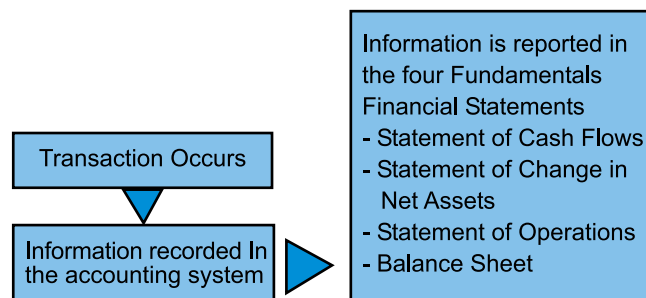
There is a fairly standard set of account categories used by all business entities. These categories are listed in a book entitled Standard Akuntansi Indonesia (the Indonesian Accounting Standard). The account is used in the financial statements comprise of a large portion of the standard set of account categories.

B.3. The Cash and Accrual Bases of Accounting

Hospitals in Indonesia, particularly public hospitals, develop their financial statements using both accrual and cash bases of accounting. This is uncommon, because in general business entities use only one basis of accounting. The cash basis of accounting is easier but it does not match revenues with resources used to generate those revenues. These two bases of accounting are used in hospitals owned by the government because the Hospital accounting standard for Indonesia Hospital is still developing.

The cash basis of accounting focuses on the flows of cash in and out of the organization, whereas the accrual basis of accounting focuses on the flows of resources and revenues those resources help generate. The discussion provided here begins with a focus on the cash basis of accounting, then the focus turns to accrual basis of accounting.

The Cash Basis of Accounting. The cash basis of accounting records transactions similarly to the way most people keep their personal checkbooks: revenues are recorded when cash is received and expenses are recorded when cash is paid out.

Table 20. Comparison of the Cash and Accrual Bases of Accounting

Cash Basis of Accounting	Cash Basis of Accounting	Accrual Basis of Accounting
Revenues are recognized	When cash is received	When revenues are earned
Expenses are recognized	When cash is paid out	When resources are used

For instance, if a hospital delivers a service to a patient, the revenue from that patient is recorded when received. Expenses are recorded as they are paid (such as when the staff is paid). The advantages of this method of accounting are: (1) it keeps track of cash flows, and (2) it is simple. Its main disadvantages are: (1) it does not match revenues with the resources used to generate those revenues, and (2) the financial reports under the cash basis of accounting are susceptible to managerial manipulation[6]. One of primary purposes of having financial statements audited is to give assurance that the statements have been prepared according to generally accepted accounting principles, and to control such abuses.

The Accrual Basis of Accounting. The accrual basis of accounting overcomes the disadvantages of the cash basis of accounting by recognizing revenues when they are earned and expenses when resources are used. The advantages of the accrual basis of accounting are that: (1) it keeps track of revenues generated and resources used as well as cash flows, (2) it matches revenues with the resources used to generate those revenues, and (3) the financial statements provide a broader picture of provider's operation. Its main disadvantages are that (1) it is more difficult

6 Zelman, McCue, Millikan (2000), Financial Management of Healthcare Organizations: An Introduction to Fundamental Tools, Concepts, and Applications. Blackwell Publisher Ltd. United Kingdom

to implement, and (2) it, too, is open to manipulation, often by bending accounting rules.

Major rules for recording transaction using the accrual basis of accounting include:

1. At least two accounts must be used to record a transaction.

    a. increase (decrease) an asset account whenever assets are acquired (or used)

    b. Increase (decrease) a liability account whenever obligations are incurred (or paid for)

    c. Increase a revenue, gain, or other support account when revenues are earned, a gain occurs, or other support is received.

    d. Increase an expense account when an asset is used.

    e. Unique rules apply to donations:

        ■ The receipt on an unrestricted donation of cash is recorded as an increase in cash and an increase in other support (an account under revenues, gains, and other support).

        ■ The receipt of temporarily restricted donation of cash that is to be used to purchase a long-lived asset (such as a piece of equipment) does not increase cash or other support. Such a transaction is recorded as an increase in long-term assets (assets restricted to the purchase of property and equipment), and an increase in temporarily restricted net assets, both balance sheet accounts.

        ■ The receipt of an unrestricted donation of long-term assets increases the balance sheet accounts, properties and equipment and unrestricted net assets, revenues, gains, and other support are not affected.

        ■ The receipt of a temporarily restricted donation of a long-lived asset increases the balance sheet accounts, properties and equipment and temporarily restricted net assets. Revenues, gains, and other support are not affected.

2. After each transaction, the fundamental accounting equation must be in balance:

    Assets = Liabilities + Net Assets

B.4. Cost Accounting

Introduction

This section discusses some of the basic concepts of cost used in cost analysis. It is important to explain the jargon if decision makers are to use cost information correctly. Different concepts of cost are required for different decision purposes. In most situations, these concepts require specific, unique methodologies of cost measurement.

Cost is a noun that never really stands alone. In most situations, two additional pieces of information are added that enhance the meaning of cost. First, the object being costed is defined. For example, we might state that the cost of a clinic visit is Rp 75.000. Objects of costing are usually of two types: (1) product (goods or services) and (2) responsibility centers (departments or larger units). Second, usually an adjective is added to modify cost. For example, we might state that the direct cost of routine nursing care in a hospital is Rp 45.000.000.

Sometimes, there is a mistake made when the terms cost and tariff are used interchangeably. Cost is quite different from tariff, even though tariff is determined based on cost. Costs usually come from the perspective of providers or Hospitals, while tariffs are usually related to the customers or patients. For example, the cost of blood testing is Rp 150.000 and the tariff is Rp 175.000. This means that to provide the service, the hospital allocates Rp 150.000 and receives Rp 175.000 as revenue from the patient.

Concepts of Cost

Understanding the concepts of cost is important for hospital managers. The managers have to know four categories of cost:

1.   Traceability to the object being costed
2.   Behaviour of cost to output or activity
3.   Management responsibility for control
4.   Future costs versus historical cost

Traceability. Of all cost classifications, traceability is most basic. Two major categories of costs classified by traceability are (1) direct cost and

(2) indirect costs. A direct cost is specifically traceable to a given cost objective. For example, the salaries and supplies are classified as direct costs of the laboratory. Indirect cost scannot be traced to a given cost objective without resorting to some arbitrary method of assignment. For example, depreciation, employee benefits, and cost of other departments would be classified as indirect costs

Incorrect classification is a common problem in cost accounting. Costs are accumulated on a department or responsibility center basis and may be direct or indirect regarding that department. However, it can be misleading to state that the same set of direct costs is also direct regarding the outputs of that department.

The major direct cost categories of most departments would include the following:

- Salaries
- Supplies
- Other (usually fees and purchased services such as dues, travel, and rent)

Indirect cost categories usually include the following:

- Depreciation
- Employee benefits, and
- Allocated costs of other departments.

The concept of direct versus indirect costs may not seem to have much specific relevance to decision makers, and to some extent, this is true. However, the concepts underlying direct versus indirect costs influence both the definition and measurement of other alternative cost concepts that do have specific relevance.

Cost Behavior. Cost is also classified by the degree of variability in relation to organization output. The actual measurement of cost behavior is influenced by a department's classification of cost, which provides the basis for categorizing costs as direct and indirect. There are four major categories of costs that are classified according to their relationship to output:

- Variable cost
- Fixed cost

- Semi-fixed cost
- Semi-variable cost

Variable costs change as the output or volume changes in a constant, proportional manner. That is, if output increases by 10 percent, costs also should increase by 10 percent. It means there is some constant cost increment per unit of output. Fixed costs do not change in response to changes in volume. They are a function of the passage of time, not output. Semi-fixed costs do change regarding changes in output, but they are not proportional. A semi-fixed cost might be considered variable or fixed, depending on the size of the steps relative to the range of volume under consideration. Semi-variable costs include elements of both fixed and variable costs. Utility costs are good examples. There may be some basic, fixed requirements per unit of time (month, year), regardless of volume – such as normal heating and lighting requirements. But there is also likely to be a direct, proportional relationship between volume and the amount of the utility cost.

Controllability: The primary purpose of gathering cost information is to aid the management control processes in the hospital. In order to facilitate management control process, costs must be assigned to an individual unit or centre responsible for that cost, usually departments, with the designated manager responsible for cost control. What proportion of the total costs charged to a department is the manager responsible? To answer this question, cost need to be separated into two categories: controllable and non-controllable costs

Controllable costs can be influenced by a designated responsibility center or departmental manager within a defined control period. It has been stated that all costs are controllable by someone at some time. For example, the chief executive officer of a health care facility, through the authority granted by governing board, is ultimately responsible for all costs.

In the health care industry, management control programs tend to be developed using one of the three approaches in designating controllable costs.

1. Controllable costs may be defined as the total costs charged to the department
2. Controllable costs may be limited to those costs classified as direct

3. Controllable costs may be defined as only those costs that are direct or variable

Future costs: Actual historical costs may be useful as a basis for projecting future costs, but should not be used without adjustment, unless it can be assumed that future conditions will be identical to past conditions. A variety of concepts and definitions has been used in current discussion of costs for decision-making purposes. For example, if 50% of beds in a hospital are taken out, it might reduce the needs of administrative staff, and some costs can be reduced as the consequences of this decision.

The following four types of costs seem to be basic to the process of selecting between alternative decision-making options:

1. Avoidable costs
2. Sunk costs
3. Incremental costs
4. Opportunity costs

Avoidable costs, which are described as the costs that can be eliminated or reduced if an activity is discontinued. These costs will be affected by decisions under consideration. Large portions of cost such as depreciation, administrative salaries, insurance, etc are categorized as **sunk costs** or not avoidable, which are not affected by decisions under consideration – they will occur regardless of the outcomes of decision-making processes. The distinction between these two costs is not perfect and might be confusing for hospital managers who do not have a financial education background. If the changes in costs occur as a result of specific management actions, as flow-on effects, these are called **incremental costs**. For example, if management sign a managed care contract that would generate 200 new admissions a year, in addition to the revenue gained from that contract there will be incremental costs with the additional admissions – larger staffing and utility costs, additional consumables and equipment, perhaps even extensions of facilities. **Opportunity costs** are determined as a consequence of using a resource in a particular way, instead of in its next best alternative way. Assume a decision is made to establish a new nursing home to expand the facility using the available land, which was bought 20 years ago. The land historical cost was 100 million but the present value is 1 billion. If selling the land and building on cheaper real estate is the next best alternative then the opportunity cost for this land is 1 billion.

B.5.   Tariff Policy

Tariff-setting is an important decision that has to be decided by the hospital managers. This decision is important for several reasons. First, tariff determines the revenues of the hospital. Revenue is tariff by time and quantity. Theoretically, the tariff level has a negative correlation with revenue, but if the demand elasticity is inelastic, increasing tariffs will increase hospital revenues. Second, tariffs affect the consumers' perception about quality. Higher tariffs mean better quality. Some patients choose the hospitals that offer expensive tariffs because they believe that the hospitals will give high quality health services. Third, tariffs determine physicians income. Physicians are the key persons in hospitals and they become important assets for hospitals. Hospital managers have a responsibility to maintain their loyalty to the hospital. In the hospitals, physicians get income from their services offered to their patients. How much the physicians get depends on an agreement between the hospital management and the physicians.

B.5.1. Determinants of Tariff

There are three factors that have to be considered by the hospital manager when deciding the tariff for the health services. These three factors that become determinants of health services tariff can be seen below.

Figure 42. Three Determinants of Hospital Tariff
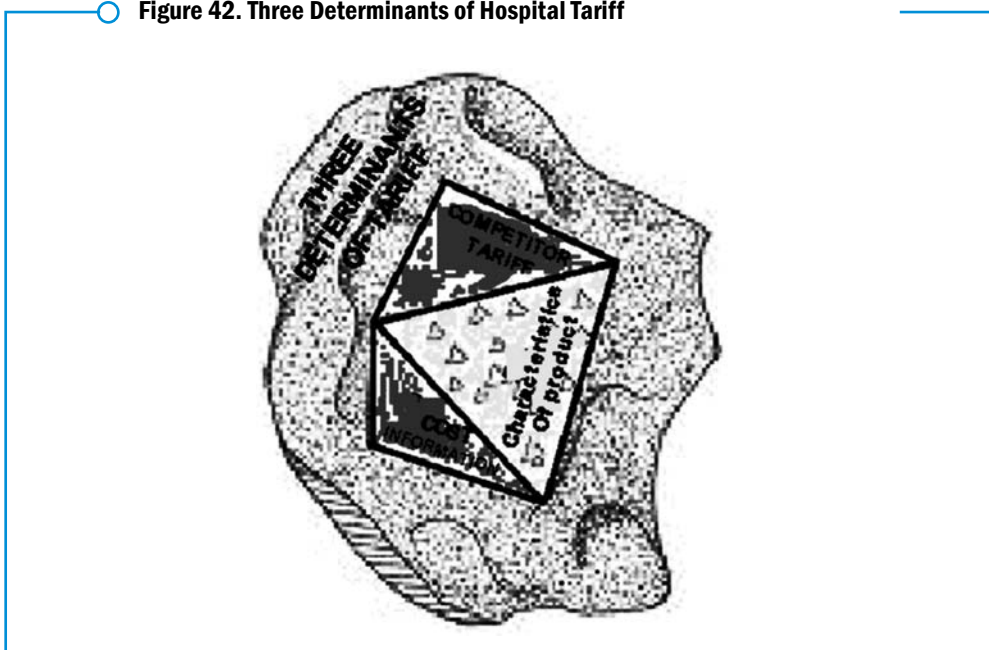
The first factor is cost information or unit cost. Unit cost becomes the baseline for determining tariff, so this unit cost has to be determined properly by the hospital managers. Inaccurately determining unit cost information will lead the hospital to a tariff decision that is either too high or too low. Unfortunately, some of the hospitals in Indonesia have no accurate information about their unit costs. The second factor is competitor tariffs. In the normal situation, the health service tariff cannot be higher than health services tariff provided by competitors. If the hospital tariff is higher than competitor tariffs, the patients will prefer the health services offered by competitor to fulfill their need for health services. The third factor is the characteristics of the product or health services. We can identify the value of our product characteristics through a market survey, which may include a "willingness to pay" survey. This information will become important in supporting tariff decisions. If potential customers value the product characteristics highly, the hospital managers can set their health services tariff higher than competitor tariffs, but if potential customers place a low value on hospital health services, the managers of the hospital would be unwise to set their tariff the same or higher than their competitor's tariffs, and should focus on improving quality before increasing tariffs.

B.5.2. Approaches in Estimating Tariff

The hospital managers can estimate their tariff through a range of approaches. One of the most common approach is markup pricing. In this approach, the hospital has information about unit cost and can use that to calculate their markup. Using this approach, the tariff is estimated by this formula:

Tariff = Unit Cost + Markup

The markup can be based-on tariff or unit cost. For example, the unit cost of a general check-up is Rp 800.000 and the hospital managers want 20% mark-up.

If the markup is based on tariff, the tariff estimation will be:

Tariff = Rp 800.000 + (20% x tariff)

Tariff = (Rp 800.000) / (0.8)

Tariff = Rp 1.000.000

If the markup is based on unit cost, the tariff estimation will be:

Tariff = Rp 800.000 + (20% x unit cost)

Tariff = Rp 800.000 + (20% x Rp 800.000)

Tariff = Rp 960.000,-

How can the hospital managers determine the tariff if they do not have unit cost information? In this situation, the hospital managers have two options: **a value pricing approach** or **a going-rate pricing approach**. The value pricing approach is used when the managers of hospital do not have sufficient information about unit costs and competitor tariffs. In this approach, the tariff is determined based on customer's perceived value of the health services that are offered by the hospital. The hospital manager can set the tariff higher than competitor tariffs when the customers value the features of the hospital's health service better than their competitors. The actual value given by the customer can be identified through a "willingness to pay" survey.

The going-rate pricing approach becomes a popular tariff approach among hospital managers because this approach can be applied easier than other approaches. In this approach, the hospital managers estimate the hospital tariff after comparing with other hospital tariffs. This is the easiest and the fastest way to estimate the hospital tariff, but this approach has two weaknesses. First, because the unit cost information does not exist, the managers of hospital cannot calculate their profit exactly – and may, in fact, be making a loss. Second, the managers of hospitals tend to determine tariffs that are higher than the ability of many potential customers to pay – with a negative result for hospital revenue.

C. Financial Management for Hospital

The majority of funds for the operational costs of government hospitals in Indonesia come from central and local government through what is called "General Allocation Grant and Special Allocation Fund". Suppliers also have a special role in keeping the hospital running when budget disbursement from government comes late, by allowing postponement of their payment by up to three months. This section will have 5 topics of discussion related to financial management: financial statements, ratio analysis, concepts

of time values for money, capital investment decisions and cash budgets, which confirm the short and long benefits of investment for a hospital.

C.1. Financial Statement.

The purpose of the financial statement is to provide managers information about the performance and progress of the hospital through the financial perspective. The financial perspective tells us about the performance of hospitals in terms of liquidity, solvability, and rentability. The financial report will assist the hospital managers to conduct short and long term planning for the business activities of the organization. There are three main financial reports: balance sheet, income statement and statement of cash flows.

1.   Balance Sheet

Balance sheets consist of Assets and Liabilities. Assets describe how business entities use their funds for daily operations and investments, while liabilities show the source of funds. An increase in liabilities will be followed by increasing the assets. Balance sheets also provide information about value of business entities at a specific period of time. Usually, the managers make a comparison between balance sheets on a yearly base in order to inform on the progress of hospital financial. The managers of hospitals also make some comparisons of the hospital financial ratios in term of liquidity, solvability, and rentability ratios to the existing standard.

 The balance sheet is developed through an accounting system and use the fixed format. The following is an example of balance sheet structure.

Table 21. The Structure of the Balance Sheet for Investor owned and Not-for-Profit Organizations

Heading	Name of Investor-Owned Organization **Balance Sheet** Dates	Name of Not-for-Profit Organization **Balance Sheet** Dates
Body	**Assets:** Current assets Non-current Assets Total Assets	**Assets:** Current assets Non-current Assets Total Assets
	Liabilities: Current Liabilities Non-Current Liabilities Total Liabilities **Shareholders' Equity:** Common Stock Retained Earnings Total Shareholders' Equity	**Liabilities**: Current Liabilities Non-Current Liabilities Total Liabilities **Net Assets:** Unrestricted Temporarily restricted Permanently restricted Total Net Assets
	Total Liability and Shareholders' Equity	**Total Liabilities and Net Assets**

ponents of assets are current assets and non-current assets or fixed assets, while the components of liabilities are current liabilities, non-current liabilities or long-term debt, share holder's equity, and retained earnings. Below is an example of a hospital balance sheet.

Figure 43. Hospital Balance Sheet

Hospital XXXXX
Balance Sheet
Year End 2008

DESCRIPTION	SERVICE		PHARMACY		YEAR			
					2008		2007	
CURRENT ASSETS								
Cash	Rp	5.000.000	Rp	8.000.000	Rp	13.000.000	Rp	135.000.000
Cash Equivalent	Rp	360.000.000	Rp	21.000.000	Rp	387.000.000	Rp	174.000.000
Bank Cash	Rp	1.300.000.000	Rp	2.135.000.000	Rp	3.521.000.000	Rp	1.220.000.000
Prepaid Expenses	Rp	(900.000.000)	Rp	-	Rp	(992.000.000)	Rp	(1.550.000.000)
Account Receivables	Rp	100.000.000	Rp	2.263.000.000	Rp	2.365.000.000	Rp	4.368.000.000
Allowance for Bad Debt	Rp	160.000.000	Rp	297.000.000	Rp	460.000.000	Rp	400.000.000
Inventory	Rp	800.000.000	Rp	2.953.000.000	Rp	3.768.000.000	Rp	3.402.000.000
Total Current Assets	Rp	1.825.000.000	Rp	7.677.000.000	Rp	9.522.000.000	Rp	8.149.000.000
FIXED ASSETS								
Land	Rp	15.000.000.000	Rp	-	Rp	15.000.000.000	Rp	15.000.000.000
Instalation and Network	Rp	1.549.000.000	Rp	-	Rp	1.549.000.000	Rp	1.549.000.000
Building	Rp	7.492.000.000	Rp	-	Rp	7.492.000.000	Rp	7.492.000.000
Machine and Tools	Rp	17.024.000.000	Rp	-	Rp	17.024.000.000	Rp	16.000.000.000
Other Fixed Assets	Rp	21.000.000	Rp	-	Rp	21.000.000	Rp	21.000.000
Total Fixed Assets	Rp	41.086.000.000	Rp	-	Rp	41.086.000.000	Rp	40.062.000.000
TOTAL ASSETS	Rp	42.911.000.000	Rp	7.677.000.000	Rp	50.608.000.000	Rp	48.211.000.000
LIABILITIES								
Drugs Liabilities	Rp	439.853.000	Rp	2.434.000.000	Rp	2.874.000.000	Rp	1.670.000.000
Account Payable	Rp	3.646.000.000	Rp	153.000.000	Rp	3.800.000.000	Rp	5.208.000.000
Promisory Notes	Rp	966.000.000	Rp	-	Rp	966.000.000	Rp	97.000.000
Fixed Assets Liabilities	Rp	198.000.000	Rp	-	Rp	198.000.000	Rp	-
Total Liabilities	Rp	5.249.853.000	Rp	2.587.000.000	Rp	7.838.000.000	Rp	6.975.000.000
EQUITY								
Net Assets	Rp	38.000.000.000	Rp	3.897.000.000	Rp	42.670.000.000	Rp	40.000.000.000
Change in Net Assets	Rp	(496.208.000)	Rp	1.393.000.000	Rp	907.000.000	Rp	1.538.000.000
Total Equity	Rp	37.503.792.000	Rp	5.290.000.000	Rp	43.577.000.000	Rp	41.538.000.000
Total Liabilities and Equity	Rp	42.911.000.000	Rp	7.677.000.000	Rp	50.608.000.000	Rp	48.211.000.000

Hospital XXXXX, Januari 2009
Hospital XXXXX Director

The hospital can use a range of sources to finance their operational activities or investment. According to Riyanto (2001), these funding sources are categorized into external sources and internal sources. The external sources consists of equity financing and debt financing, while internal sources consists of internal financing and intensive financing.

Figure 44. Internal and External sources of Funding (Riyanto, 2001)
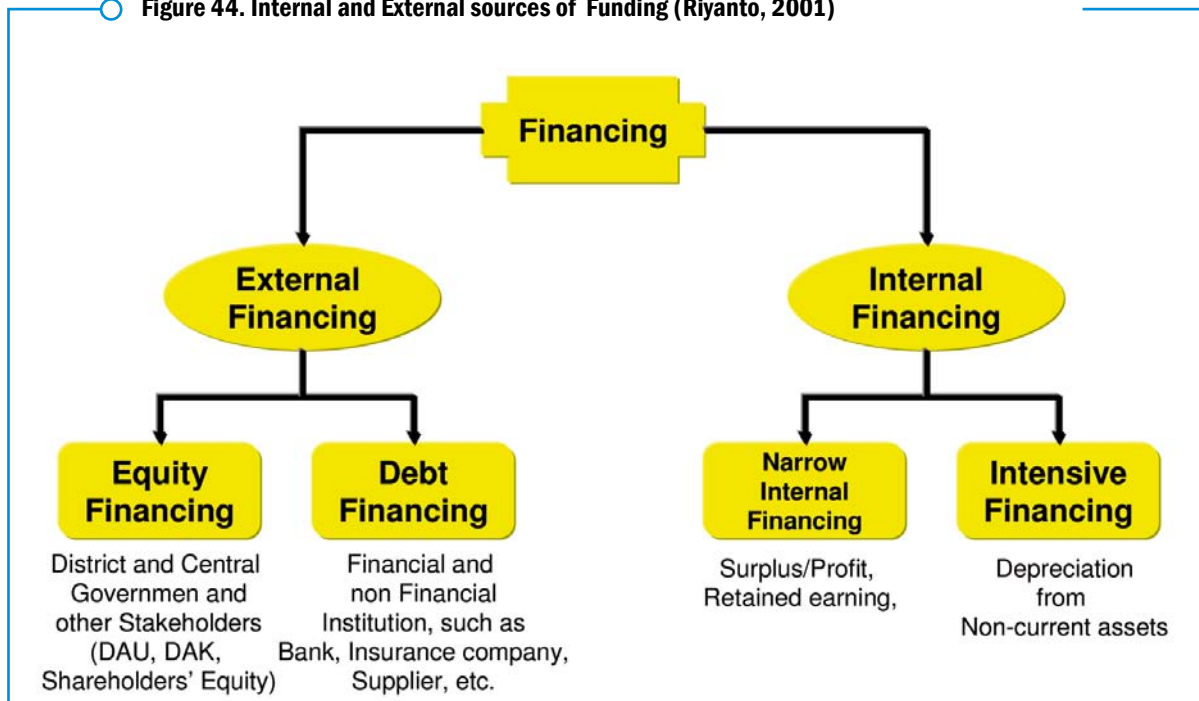
Some hospitals in Indonesia, particularly public hospitals, such as the district hospital, can have different sources of funds, i.e. from central government, local government, retained earnings or surplus, the suppliers of drugs and medical supplies, and funds from financial institutions and philanthropic organizations. Most of the district hospital funds come from central and district government through Dana Alokasi Umum/General Allocation Grant (DAU) and Dana Alokasi Khusus/ Special Allocation Fund (DAK). Suppliers may also provide a critical role in maintaining the sustainability of hospital daily operations when the funds from the local or central government have not yet been distributed to the district hospital. The suppliers supply drugs, linens, consumable goods, etc., extending their terms of payment to three months or more after delivery – effectively providing credit over this period while hospitals await funding.

## 2.	Income statement

As opposed to the balance sheet, which summarizes the hospital's total assets, liabilities, and net assets at a particular point of time, the income statement is a summary of the hospital's revenue and expenses over a

period of time. The time period is usually the time between statements, such as a quarter, half year, or fiscal year. The structure of income statements for investor-owned hospitals is organized by five components:

i.   Operating income (the differences between revenues and expenses)
ii. Non-operating income
iii. Net income before taxes
iv. Provision for taxes
v.   Net income (the differences between revenues and expenses)

The structure of the income statement for not-for-profit hospitals includes the following components:

1. Operating income
2. Other income
3. Excess of revenue, Gains and other support over expenses
4. Other items
5. Increase in Unrestricted Net Assets

Table 22. The Structure of Income Statements for Investor-owned and Not-for-Profit Hospitals

	Investor-Owned Hospital	**Not-for Profit Hospital**
Title	Income Statement	Income Statement
Body	Revenue - Expenses	Unrestricted Revenues, Gains, and Other support - Expenses
	Operating Income + Other Income	*Operating Income* + Other Income
	Income Before Taxes + Income Taxes	Excess of Revenues, Gains, and Other Support over Expenses Other
	Net Income	*Increase in Unrestricted Net Assets*

Generally, the income statement uses the accrual basis of accounting, and summarizes how much the hospital earned, and the resources it used in generating that income during a specific period of time. It does not use the cash basis of accounting, which focuses on the cash that actually came in and went out. But, for a number of reasons, during the introduction of Badan Layanan Umum Daerah (BLUD)/ Public enterprise, district hospitals in Indonesia have had to apply both accounting systems. The cash basis of

accounting is practiced for subsidized funds from the government, while the accrual basis of accounting is applied for income from patients. Below is an example of an income statement of a hospital.

Table 23. Income Statement in a Hospital

DESCRIPTION	SERVICE	PHARMACY	YEAR	
			2008	2007
Hospital XXXXX Income Statement Year End 2008				
REVENUES				
Operating revenue	6.341.000.000	-	6.341.000.000	7.248.000.000
Out-patient revenue	2.221.000.000	-	2.221.000.000	2.282.000.000
In-patient revenue	7.128.000.000	-	7.128.000.000	5.722.000.000
Lab revenue	4.524.000.000	-	4.524.000.000	4.104.000.000
Radiology revenue	1.296.000.000	-	1.296.000.000	1.259.000.000
Ambulance revenue	201.000.000	-	201.000.000	181.000.000
Medical Rehab revenue	435.000.000	-	435.000.000	576.000.000
Emergency revenue	260.000.000	-	260.000.000	519.000.000
Birthing revenue	1.230.000.000	-	1.230.000.000	1.356.000.000
Hemodialisis revenue	2.943.000.000	-	2.943.000.000	2.688.000.000
Corpse service revenue	143.000.000	-	143.000.000	125.000.000
Support service revenue	863.000.000	-	863.000.000	917.000.000
Special parking revenue	113.000.000	-	113.000.000	126.000.000
Pharmacy revenue	-	10.058.000.000	10.058.000.000	16.220.000.000
Total Revenues	27.698.000.000	10.058.000.000	37.756.000.000	43.323.000.000
GENERAL EXPENSES				
Salary civil servants	12.164.000.000	-	12.164.000.000	10.069.000.000
Salary daily staff	102.000.000	-	102.000.000	-
Honor procurement team	7.000.000	-	7.000.000	-
Allowance treasurer	10.000.000	-	10.000.000	7.000.000
Honor contract staff	1.166.000.000	-	1.166.000.000	1.738.000.000
Scholarships	161.000.000	-	161.000.000	64.000.000
Trainings	515.000.000	-	515.000.000	304.000.000
Health check-up	-	-	-	226.000
Service support	11.426.000.000	1.536.000.000	12.962.000.000	12.036.000.000
Total General Expenses	25.551.000.000	1.536.000.000	27.087.000.000	24.218.226.000
EQUIPMENT AND SERVICE EXPENSES				
Stationary	154.000.000	-	154.000.000	151.000.000
Electric and Electronic tools	49.000.000	-	49.000.000	91.000.000
Post and Stamps	4.000.000	-	4.000.000	4.000.000
Sanitary tools	639.000.000	3.000.000	642.000.000	611.000.000
Support cleaning	9.000.000	-	9.000.000	17.000.000
Drugs	5.637.000.000	16.078.000.000	21.715.000.000	18.559.000.000
Food for patients	1.422.000.000	-	1.422.000.000	1.428.000.000
Other staff	2.040.000.000	-	2.040.000.000	518.000.000
Printing	193.000.000	48.000.000	241.000.000	408.000.000
Photocopy	4.000.000	-	4.000.000	47.000.000
Food and Drinks for staff	719.000.000	1.000.000	720.000.000	278.000.000
Meeting Meals	28.000.000	-	28.000.000	26.000.000

3.   Statement of Cash Flows

The third financial statement is the statement of cash flows. This financial statement was developed to report the cash inflows and outflows. The statement of cash flows covers the time period as the income statements. The structure of the statement of cash flow is organized into the following components:

1. Cash flows from operating activities
2. Cash flows from investing activities
3. Cash flows from financing activities
4. Net increase (decrease) in cash and cash equivalent

Table 24. The Structure of Statement of Cash Flows

	Year 1	Year 2
1. Cash Flows from Operating activities, gain and losses 2. Cash Flows from Investing Activities 3. Cash Flows from Financing Activities 4. Net (decrease) Increase in cash and cash equivalent 5. Cash and cash equivalents at the beginning of the year 6. Cash and cash equivalent at the end of the year		

Source: Cleverly (1997)

C.2. Financial Ratios

The financial performance of hospitals is of interest to a number of individuals and groups, including administrators, board members, creditors, bondholders, community members, and governments. In the area of Badan Layanan Umum Daerah (BLUD)/ Public Enterprise, the hospitals in Indonesia have to prepare their financial statement based on the standard of Indonesia Accounting and manage their assets, liabilities, and activities properly. The financial statement analysis can help the hospital stakeholders to understand how well the chief executive officers of the hospital manage their assets, liabilities, and activities. This part of the module shows how to analyze the financial statements of the hospital to help to answer questions about the hospital that produces them.

1. Is the hospital profitable? Why or why not?
2. How effective is the organization in collecting its receivables?
3. Is the hospital in a good position to pay its bills?
4. How efficiently is the facility using its assets?
5. Are the facility's plant and equipment in need of replacement?
6. Is the organization in a good position to take on additional debts?

Three approaches are commonly used to analyze financial statements: horizontal, vertical, and ratio analysis. Although horizontal and vertical analysis is commonly used, ratio analysis is the preferred approach to gain an in-depth understanding of financial statements. A ratio expresses the relationship between two members as a single number.

Ratios are generally grouped into four categories: liquidity, profitability (rentability), solvability, and activity.

- Liquidity ratios answer the question, "How well is the hospital positioned to meet its short-term obligations?"
- Profitability ratios answer the question, "How profitable is the hospital?"
- Activity ratios answer the question, "How efficiently is the hospital using the assets to produce revenues?"
- Solvability ratios answer the question, "How able is the organization to take on new debt?"

Liquidity ratios

There are six key ratios that fall into liquidity ratios: current ratio, quick ratio, acid test ratio, days in accounts receivable ratio, days cash on hand ratio, and average payment period ratio. The formula and standard of the ratios can be seen below (Zelman et al., 2000).

Table 25. Hospital Liquidity Ratios: Formula and Standard

RATIO	FORMULA	STANDARD	DESIRED POSITION
Current Ratio	(Current Assets) / (Current Liabilities)	1.98	Above
Quick ratio	(Cash+Marketable Securities+Net Receivables) / (Current Liabilities)	1.86	Above
Acid test ratio	Cash+Marketable Securities) / (Current Liabilities)	0.2	Above
Days in Accounts Receivable ratio	(Net Patient Accounts Receivable) / (Net Patients Revenue / 365)	67 days	Below
Days cash on hand ratio	(Cash+Marketable securities) / ((Operating Expenses – Depreciation Expenses) / 365)	22 days	Above
Average payment period ratio	Current Liabilities / ((Total Expenses – Depreciation Expense) / 365)	56 days	Organizationally dependent

Profitability Ratios

There are several profitability ratios, each providing a different insight into the ability of a heath care organization to produce a profit. The most commonly used ratios include operating margin, non-patient service revenue, return on net assets, and return on total assets.

Table 26. Hospital Profitability Ratios: Formula and Standardv

RATIO	FORMULA	STANDARD	DESIRED POSITION
Operating Margin	(Operating Income) / (Total Operating Revenue)	0.027	Above
Non-operating Ratio	(Non-operating Revenues) / (Total Operating Revenues)	N/A	Organizationally dependent
Return on Total assets		0.042	Above
Return on net assets	(Excess Of Revenues Over Expenses) / (Net Assets)	0.082	Above

Activity Ratios

Activity ratios answer the question, "How efficiently is the hospital using the assets to produce revenues?" In general, activity ratios include Total Assets Turnover Ratio, Fixed Asset Turnover Ratio, and Age of Plant Ratio. The formula and standard of the activity ratios are as follow:

Table 27. Hospital Activity Ratios: Formula and Standard

RATIO	FORMULA	STANDARD	DESIRED POSITION
Total Assets Turnover Ratio	(Total Revenues) / (Total Assets)	1.02	Above
Fixed Asset Turnover Ratio	(Total Revenues) / (Net Plant And Equipment)	2.20	Above
Age Of Plant Ratio	(Accumulated Depreciation) / (Depreciation Expenses)	8.17	Below

Solvability Ratios

Solvability ratios answer two main questions. First, "How are a Hospital's assets financed?" and second, "How able is the organization to take on new debt?" In many cases, a greater understanding of these ratios can be gained by examining the statement of cash flow to see if significant long-term debt has been acquired or paid off, or if there has been a sale or purchase of fixed assets. Solvability ratios include long-term debt to net assets, net assets to total assets, time interest earned, and debt service coverage.

Table 28. Hospital Solvability Ratios

RATIO	FORMULA	STANDARD	DESIRED POSITION
Long Term Debt To Net Assets Ratio	(Long Term Debt) / (Net Assets)	0.620	Organizationally Dependent
Net Asset To Total Assets Ratio	(Net Assets) / (Total Assets)	0.532	Organizationally Dependent
Times Interest Earned Ratio	(Excess Of Revenues Over Expenses + Interest Expenses) / (Interest Expense)	3.16	Above
Debt Service Coverage Ratio	(Excess Of Revenues Over Expenses+ Interest Expenses+Depreciation) / (Interest Expense)	3.24	Above

C.3. Time Value of Money

This part focuses on the basics of time value of money, which is an essential component for making a long term financial decision. The time value of money can help to determine how much an amount of money invested today will be worth in the future (future value) and how much an amount of money which will be received some time in the future is worth today (present value).

Present value

In this section, we try to answer the question, "how much is an amount of money to be received next year worth today?" The Present value of an amount of money to be received in the future can be calculated by the formula below.

PV = FV x 1/(1+i)n

PV = Present Value   FV = Future Value   1/(1+i)n = The present value factor I = interest rate   n = number of periods (the number of time periods of the investment)

As an example, the present value of Rp 10.000 at 10 percent for five years can be calculated as follows:

> **PV = FV x 1/(1+i)n**
>
> PV = Rp 10.000 x 1/(1+10%)5
>
> PV = Rp 10.000 x 1/(1.6105)
>
> PV = Rp 10.000 x (0.6209)
>
> PV = Rp 6.209,-

Its means Rp 10.000 received five years from now is only worth Rp 6.290 in today's Rupiahs.

Future value

In this section, we try to answer the question, "How much is the future value of money that might be invested today?" To answer that question, we can use this formula:

FV = PV x (1+i)n

PV = Present Value   FV = Future Value   (1+i)n = The Future value factor
I = interest rate   n = number of periods (the number of time periods of the investment)

As an example, to calculate the future value of Rp 10.000 in four years at 10 percent interest, set up the formula as follow:

> **FV = PV x (1+i)n**
>
> FV = Rp 10.000 x (1+10%)4
>
> FV = Rp 10.000 x (1.4641)
>
> FV = Rp 14.641

C.4. Capital Investment Decisions (Capital Budgeting)

Capital investment decisions are major Rupiah investments that are expected to achieve long-term benefits for a hospital. Such investments are quite common in Indonesian's hospitals, including district hospitals. There are three categories of capital investment decisions:

1. **Strategic decisions**. Capital investment decisions are designed to increase the hospital's strategic position, i.e. increase the hospital's market share.
2. **Expansion decisions**. Capital investment decisions are designed to increase the hospital's operational capacity
3. **Replacement decisions**. Capital investment decisions are designed to replace older assets such as medical equipment, with newer ones.

A capital investment is expected to achieve long-term benefits for the hospital. Such benefits generally fall into three categories: non financial benefits, financial returns, and ability to attract more funds in the future. Clearly, these three objectives are highly interrelated.

1. Non-financial Benefits. A primary concern with many capital investment decisions is how well an investment enhances survival of the hospital and supports its mission, patients, employees, and the community. A particularly interesting movement in health care is the increasing interest of some hospital stakeholders to assure that capital investment decisions give direct benefit to the community. Community benefit includes increased access to different types of care, higher quality, lower changes, the provision of charity care, and the employment of community members.

2. Financial Returns. Direct financial benefits are a primary concern to many stakeholders investing in hospitals. Direct benefit can take two forms. First is periodic income for hospitals and the stakeholders. The second type of direct financial benefit is capital appreciation. Capital appreciation can increase the value of hospitals.

3. Ability to Attract Funds in the Future. Without new capital funds, many hospitals would be unable to offer new services, or to subsidize unprofitable services. Therefore, another objective of capital investment is to invest in profitable services that will attract debt (borrowing) and equity financing in the future, such as from government entities, foundations, and community-based organizations.

Analytic Methods

An investment decision involves many factors. Three commonly used financial techniques to analyze capital investment decisions for hospitals are:

1. Pay back
2. Net present value
3. Internal rate of return

Net present value and internal rate of return are based on the concept of time-value of money, while the pay-back period technique does not account for the time value of money.

The Pay Back Method

One way to analyze these investments is to calculate the time it would take to recoup the investment. This is called the pay-back method. The

pay-back method is a method to evaluate the feasibility of an investment by determining how long it would take until the initial investment is recovered. The strength of this method is that it is simple to calculate and easy to understand. The major weakness is that it does not account for the time value of money, it provides an answer in years, not in Rupiahs, and it disregards cash flow after the payback.

The Net Present Value

The Net Present Value (NPV) method overcomes the weaknesses of the payback period method by accounting for cash flows after payback and discounting these cash flows by the cost of capital. The cost of capital is the rate of return that compensates the investors for the time value of money and for the risk of the investment. The NPV measures the differences between the present value of operating cash flows generated by the investment and the initial cost of that investment. The NPV technique measures the Rupiahs return on the investment.

The general decision rule regarding NPV is:

1. If NPV > 0, accept the investment or the investment is feasible
2. If NPV < 0, reject the investment or the investment is not feasible
3. If more than one mutually exclusive investment is being considered, choose the one with the highest positive NPV. If more than one mutually exclusive investment is being considered, and one will be undertaken regardless of NPV, then the one with the highest NPV should be chosen, even though the NPV may be negative.

The strengths of NPV method are that it provides an answer in Rupiahs, not years, it accounts for all cash flows from the investment, including those beyond the payback period, and it discounts these cash flows at the cost of capital. The major weakness to the NPV method is that the discount rate is often difficult to determine and may be hard to justify. The calculation of an NPV can be accomplished in eight steps:

1. Identify the initial cash outflow
2. Determine operating cash flows
   a. Identify annual net revenues
   b. Identify annual expenses
   c. Compute net income

3. Add back depreciation
4. Add (subtract) any non-annual cash flows
5. Make working capital adjustments
6. Determine the present value of each year's cash flows
7. Determine the present value of all cash flows
8. Determine the net present value of the investment

The Internal Rate of Return (IRR)

The IRR can be defined and interpreted in several ways. First, it is the discount rate at which the discounted cash flows over the life of the investment exactly equal the initial investment. Secondly, it is the discount rate that results in a net present value equal to zero. Thirdly, it is the percentage return on the investment.

The IRR method determines the actual percentage return on the investment. When an organization chooses an investment according to the IRR method, its decision depends on the value of the IRR relative to the required rate of return on the investment (also called the cost of capital or hurdle rate).

The general decision rule regarding IRR is:

1. If the IRR is greater than the required rate of return, the investment should be accepted.
2. If the IRR is less than the required rate of return, the investment should be rejected
3. If the IRR is equal to the required rate of return, the facility should be indifferent about accepting or rejecting the project.

There are three major strengths to using IRR as a decision criterion. They are:

1. That it considers all the relevant cash flows related to the investment
2. It is a time-value money-based approach
3. Managers are accustomed to evaluating investment by their respective rates of return

Similarly, there are two weaknesses to using IRR method as a decision criterion. They are:

1. It assumes that proceeds are reinvested at the internal rate of return, which may not be equal to the cost of the capital.

2. IRR sometimes generates multiple rates of return.

However, while there are some weaknesses to using the IRR method, this method is most widely used in industry as the preferred way to making responsible investment decisions.

C.5. Cash Budget

Cash budgets embody the key sources of information that allow management to determine hospital's short-term needs for cash. When a cash budget is modified to include the effects of alternative outcomes, the hospital's financial manager can better assess the issue of liquidity risk and make decisions that will reduce the probability of liquidity crisis. One of the following three courses of action can be taken (Cleverly, 1997):

1. Increase the level of cash and investment reserves
2. Restructure the maturity of existing debt
3. Arrange a line of credit with a financial institution or supplier

Historically, the finance literature has identified the following three major types of reasons for holding cash balances:

1. Transactional. Transactional motives relate to the need to maintain cash balances to allow for routine expenditures such things as payroll, supplies, and capital investment.
2. Precautionary. The precautionary motive is related to the concept of risk. Most hospitals do not know what their actual disbursement and receipts will be during any interval. To avoid this risk, hospitals add some "cushion" to the cash balances so that they can meet unexpected contingencies.
3. Speculative. The speculative motive represents management's desire to have access to cash to take advantage of special investment opportunities that promise unusually high returns.

Sources and Use of Cash

In its most basic form, a cash budget is a statement that projects how the hospital's cash balance position will change between two points in time. Changes to cash position are categorized as either sources of cash flow or uses of cash flow. Sources of cash include:

- Collection of account receivable
- Cash sales
- Investment income
- Sales of assets
- Financing
- Capital contributions

Uses of cash include

- Payments to employees
- Payments to suppliers
- Payments to lender for interest and principal
- Purchase of fixed assets
- Investments

When cash flows are extremely volatile but reasonably forecastable, cash budget for shorter terms are desirable. If cash flows are reasonably stable, a cash budget defined on a quarterly basis may be appropriate. Although most hospitals develop cash budgets on a monthly basis, it is common for these budgets to be revised periodically because the original budget assumptions often prove to be inaccurate.

The primary factor affecting the validity of the cash budget is the accuracy of the forecasts for individual cash-flow categories. The greater the degree of possible variation between actual and forecasted cash flow is, the higher is the liquidity need of the hospital. Hospitals that cannot predict cash flow with much certainty should increase their cash balances or negotiate lines of credit to escape the possibility of severe cash insolvency problems.

Preparing the Cash Budget

The most important in cash budgeting is the revenue forecast. The revenue for hospitals will be a function of the following two factors: (1) volume and (2) price. Most hospitals use a variety of methods to estimate the volume of services during the cash budget period. In general, the following two major categories of methods are used to develop estimates of volumes: (1) Subjective forecasts and (2) statistical forecasts. In reality, most forecasts probably combine elements of both subjective and statistical methods.

Figure 45. Organizational budgets
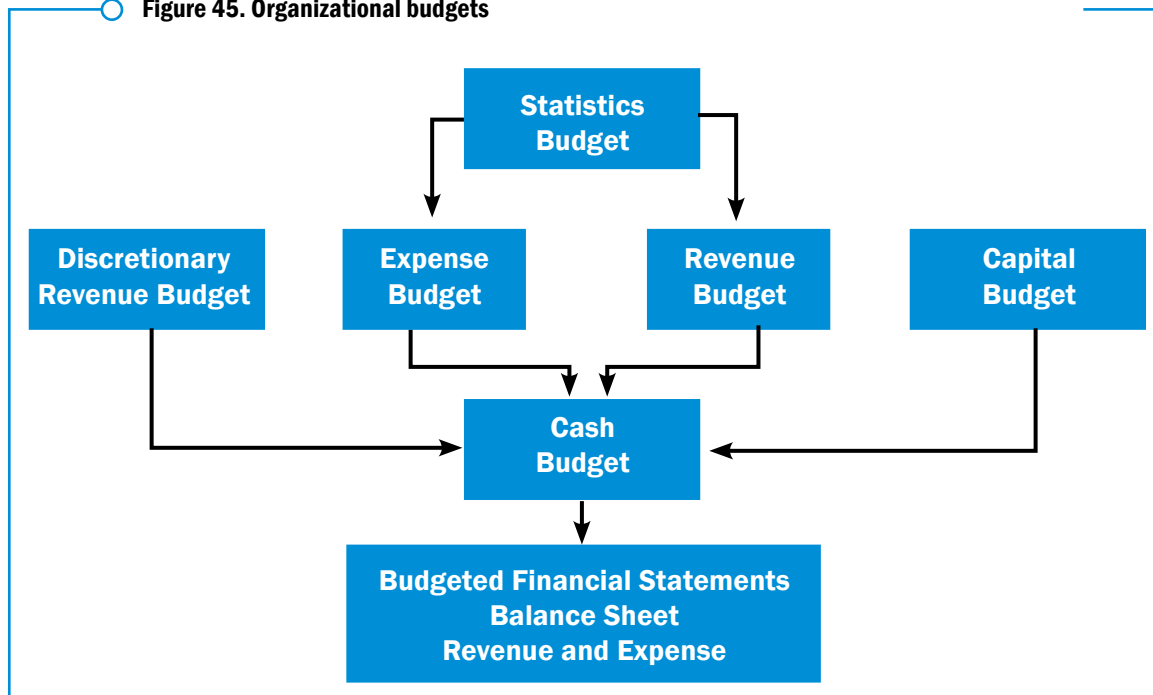
Predicting prices for the hospital's products and services may be almost as difficult as projecting volumes. Hospitals are price-takers in most situations: this means that they rely on someone else to establish prices for their services. Parliament and national insurance companies are the organizations that set prices, and exert tremendous influence on a major portion of the total revenue budget for district hospitals in Indonesia.

Changes in the collection patterns of major third party payers can have a significant effect on cash flow, and should be reflected immediately by revising cash budgets. For example, if an insurance company decides to delay the payment of patient bills by sixty days to convert cash, the cash budget must be revised to reflect this new payment pattern. The following is an example of a cash budget.

Table 29. Cash Budget (in Millions Rupiahs)

	January	February	March	April
Beginning cash balance	1350	1400	1700	1560
Add receipts	1920	1935	2005	1930
Less disbursements	1870	1635	2145	1935
Cash flow	50	300	(140)	(5)
Ending Cash balance	1400	1700	1560	1555

D.   Human Resources Management

Other than finances, an organization has three important components that affect its functions: the system, infrastructure and human resources (HR). Human resources have the highest influence on the organization, effectively directing the functioning of the organization. No matter how good the system and the infrastructure is, without appropriate human resources support, the organization cannot achieve its goals and objectives.

A hospital needs good human resources management in order to reach its objectives. This includes human resource planning, and staff placement and distribution based on the services provided. The basic needs for HR planning are the availability of staff baseline data, the ability of training institutions to provide competent personnel, and the commitment from the government to recruit, distribute and maintain the available human resources, based on competency criteria and professional values.

Human resources management needs also to think about career development for their staff and not merely plan training and education. Career development is a right for all staff and is necessary for performance improvement.

Hospital staff with management responsibilities deals with both staff and material. More than half of the budget in a hospital is spent on salaries. Managing people is more complex than managing things and working with people demands effective communication skills. People are actually the most valuable asset for any organization. Human resources management needs to perceive people not only as their means of production, but also as a source of strength, which offers multiple benefits for the organization.

This module will discuss the process of human resources management from analyzing the need for specific human resources and the development of the existing resources.

D.1.1 Job Design and Analysis

To implement "The right person in the right place" motto requires an understanding of multiple elements. From the organization's point of view, the first important component is "Place", since the organization is the place for people (men/women) to work – effectively this working place is the job. Having a clear job description (sometimes confused with position) does not mean that the problem is solved. The lack of knowledge about the description of a job ironically leads to the fact that some job holders do not know or feel uncertain about what they are doing. To overcome this problem, a job analysis should be done systematically and regularly, collecting all information and facts related to a certain job, and ensuring the description is kept current.

A job is "a pattern of tasks, duties, and responsibilities that can be done by a person". Knowledge about jobs and their requirements have to be collected through a process called as job analysis, in which information about jobs is systematically collected evaluated and organized. Thus, job analysis is an action to study these patterns of activity to determine the tasks, duties and responsibilities needed for each job (Werther & Davis 1996). Job analysis is usually carried out by Human Resources Specialist, known as job analysts; who gather data about each job in the organization. According to Davis (cited in Lytle 1954):

> "A Job analysis is an investigation and analysis of a work assignment, and the conditions surrounding it, to determine its requirements from an organizational standpoint. In this respect it differs fundamentally from time and motion study. In most cases, it is used by the personnel department to procure information regarding the job and the worker that will facilitate employment, promotion, transfer and training."

Before conducting job analysis, job analysts and the organization need to inform their employees about why it is being done as well as to explain

the need for the process and to assure employees that the outcome will not have an adverse effect on them. In addition, the job analyst also has to become familiar with the external environment, the organization, its purpose, strategies, design, inputs (people, materials and procedures) and outputs (products and services). Familiarity with the company, industry, and government reports about the work to be analyzed further equips the analyst to develop useful job analysis information (Werther and Davis 1996). The following steps are to be considered:

- Identifying the jobs to be analyzed
  This can be done by constructing lists of jobs from payroll records, organization charts and discussions with workers and supervisors or if job analysis has been done before, earlier records may be used.
- Developing a job analysis questionnaire
  The questionnaire uncovers the duties, responsibilities, human abilities and performance standards of the job investigated. Several questions asked in a job analysis questionnaire relate to: status and identification, duties and responsibilities, human characteristics and working conditions, and performance standards.
- Collection job analysis information
  Information can be collected by doing interviews, using panels of experts, questionnaires, employee logbooks, observations or a combination of these techniques.

D.1.2. Application of job analysis information

Figure 1 shows the relationship between the preparation, collection and application of job analysis information. Human Resources departments obtain information about jobs through the preparation and collection phases of job analysis and the immediate application of this information transforms it into job descriptions, job specifications and job standards (Werther & Davis 1996).

Figure 46. Three Phases of Job Analysis Information

PREPARATION FOR JOB ANALYSIS	COLLECTION OF JOB ANALYSIS INFORMATION			APPLICATIONS OF JOB ANALYSYS INFORMATION	
General Familiarity with organization and type of work	Job Identification	Questionnaire Development	Data Collection	Applications: - Job description - Job specification - Job standards	Addition to Human Resource Information System

(Source: Werther & Davis 1996)

Job Description: a written statement that explains the duties, working conditions and other aspects of a specified job. Job description defines what a job is; it is a profile of the job.

Figure 47. Example of a Job Description

BREVARD GENERAL HOSPITAL

Job Description

Job Title:	Job Analyst	Job Code:	166.088
Date:	January 3, 1996	Author:	John Doakes
Job Location:	Personnel Department	Job Grade:	
Supervisor:	Harold Grantinni	Status:	Exempt

Job Summary: Collects and develops job analysis information through interviews, questionnaires, observation, or other means. Provides other personnel specialists with needed information.

Job Duties: Designs job analysis schedules and questionnaires. Collects job information.

Interacts with workers, supervisors, and peers.

Writes job descriptions and job specifications.

Reports safety hazards to area manager and safety departments.

Verifies all information through two sources.

Performs other duties as assigned by supervisors.

Working Conditions: Works most of the time in well-ventilated modern office. Data collection often requires on-site work under every working condition found in company. Works standard 8 a.m. to 5 p.m., except to collect second-shift data and when traveling (one to three days per month).

The above information is correct as approved by:

(Signed) _____   (Signed) _____

Job Analyst   Department Manager

_____   _____

Source: Werther & Davis (1996).

Job Specification: is a description about the job demands on the employees who do it and the human skills that are required. It is a profile of the human characteristics needed by the person performing the job, which include experience, training, education and the ability to meet physical and mental demands. Moreover, when positions cross national boundaries, it is important to add other specifications such as linguistic requirements, legal details, and cultural familiarity. Since job descriptions and job specifications both focus on the job, they are often combined into one document called a job description.

Figure 48. A Job Specification Sheet

Source: Werther & Davis (1996)

Job Performance Standards. Job performance standards are developed from job analysis information, and then actual employee performance is measured. The standard has two functions: it sets targets for employee efforts and criteria against which job success is measured.

According to Cushway (1994) the benefits of job analysis are multiple. Job analysis supports the organization in conducting other functions such as human resources planning, selection, job evaluation, training and development, job re-design, performance management, organizational review and restructuring and employees' rights.

Job design. A job is more than a collection of tasks which are recorded on a job analysis schedule and summarized in a job description (Werther and Davis, 1996). How well jobs are designed will play a significant role in the success and even survival of many organizations. Jobs are the foundation of organizational productivity and employee satisfaction. Moreover, well-designed jobs will become more important in attracting and retaining a motivated workforce capable of producing quality products and services.

Effective job design requires a trade-off between efficiency and behavioral elements. Efficiency elements stress productivity, while behavioral elements focus on employee needs. Thus the role of managers and HR specialists is to achieve a balance between these trade-offs. Managers and job designers often face questions whether a particular job should have more or less specialization. If jobs are under-specialized, then job designers may engage in work simplification, by reducing the number of tasks. If the jobs are overspecialized, then they must be expanded or enriched.

D.2. Recruitment and Selection

D.2.1. RECRUITMENT

The quality of its recruits determines the quality of an organization's human resources. The process of finding and attracting capable applicants to apply for employment is known as recruitment. The process begins when new recruits are sought and ends when their applications are submitted and results as a pool of applicants from which new employees are selected. This process mostly is the responsibility of professionals in the Human Resources department, who are called recruiters (Werther & Davis 1996).

Recruiters may face challenges in the recruitment process, such as:

- Strategic and human resource plan. Strategic plan specify the direction and suggest the types of task and jobs that need to be undertaken.

While the human resource plan identify which jobs should be filled by recruiting outside the form and which are to be filled internally. The strategic and human resource plans enable recruiters to place the organization's overall hiring needs in perspective.

- Equal employment opportunity and affirmative action plans
- Recruiter habits. Certain habits can evolve from a recruiter's past success. Habits can eliminate time-consuming decisions that yield the same answers, but it can also continue past mistakes or avoid more effective alternatives
- Environmental conditions, such as unemployment rate, shortages in specific skills, labor laws, etc.
- Job requirements, organization policies, incentives and costs

D.2.2. Selection

Selection is different from recruitment. Recruitment technically takes place before selection. Recruitment involves identifying the sources of manpower and stimulating them to apply for jobs in the organizations. It aims at increasing the number of applications for wider choices or for increasing the selection ratio. While selection is the process of choosing the best out of those recruited. The selection process is a series of specific steps used to decide which recruits should be hired, which begins when recruits apply for employment and ends with the hiring decision. In many human resources department, recruiting and selection are combined and called the employment function (Werther & Davis 1996, Venance 2009).

Selection is an important function. Faults in selection lead to wastage of time and money and may spoil the environment of an organization. In this regard, scientific selection and placement of personnel can go a long way in building up a stable work force, where it helps to reduce non-attendance and labour turnover, and is concurrently very helpful in increasing the efficiency and productivity of the organization (Dessler, 2005 cited in Venance 2009).

The selection process relies on three inputs, i.e. job analysis, job description and job specification. Typically, the steps in the selection process consist of:

1. Preliminary reception of application
2. Employment test

3. Selection interview
4. References and background checks
5. Medical evaluation
6. Supervisory interview
7. Realistic job previews
8. Hiring decision

Schuler and Jackson (1997) describe the full process and factors affecting the process as a series of linked steps.

Figure 49. The recruitment and selection process

Other HR Activities:	Recruitment:	Internal	Recruitment
- HR Planning	- How many?	- source:	activities:
- Job design	- Where?	1. Promotion	- Realistic
- Job Analysis	- Who	2. Transfer	Interview
- Selection		3. Job rotation	- Extended
- Training &		4. Re employment	job &
development		- Method:	Career
		1. Posting	opportunity
		2. Skill List	

Environment:
- Economy
-competition
- Strategy
- Vision & Mission

Policy & Law Consideration

External
- Source:
1. Reference
2. Walk in interview
3. other organization
4. Agent
5. Schools Work association and central personnel

- Method:
1. Radio TV
2. Newspaper
3. Jurnal perdagangan
4. Computer service Merger & acquisition

Potential Candidate pools

SELECTION AND PLACEMENT

With the right procedure supported by the right selection tools, organizations can get qualified personnel and this brings advantages both to the personnel and to the organization.

D.3. HR Training & Development

Nowadays, organizations of all sizes in all industries are trying to be best in their field. Hospitals, too, are striving for excellence and total quality. One of the most important assets for organizational performance is human competence. Placing employees in jobs does not guarantee their success. Most of the time, new employees are uncertain about their roles and responsibilities. Job demands and employees' capabilities must be balanced through orientation and training programs: both are needed. As soon as employees have been trained and mastered their jobs, they may need further development to prepare for their future responsibilities. Training and development efforts enable employees to assume expanded duties and greater responsibilities and enable to face the ongoing trends toward greater work-force diversity, flatter organizations, and increased global competition.

Sikula (1981) offers a description for training and capacity development as "training is a short-term educational process utilizing a systematic and organized procedure by which non-managerial personnel learn technical knowledge and skills for a defined purpose. Development, in reference to staffing and personnel matters, is a long term educational process utilizing a systematic and organized procedure by which managerial personnel learn conceptual and theoretical knowledge for general purposes".

Training helps employees do their current jobs and the benefits of training may extend throughout a person's career to help develop the person for future responsibilities. Development helps individuals handle future responsibilities, with less concern for current job duties. Most organizations are seeking ways to create continuous learning. Training can make a substantial contribution, although it is not a universal solution to every need or problem.

By properly executing training and development program, organizations and employees can gain several benefits, such as

1. Increasing productivity, in quantity and quality.
2. Improving the morale of the workforce.
3. Less supervision is needed and fewer work accidents are likely. Training and development can increase employees' self confidence in doing their jobs, and their supervisor will not have to supervise

all the time. Moreover, the more skilled and confident they become, employees will be more cautious and careful, avoiding mistakes, errors and accidents.

4.   It aids in encouraging and achieving self-development and self-confidence.

Before executing a training program, human resource specialists and managers have to assess the needs, objectives, content and learning principles associated with training:

1.   Needs assessment. At this phase, managers diagnoses the current problems and future challenges to be met through training and development. Moreover, needs assessment must consider each person and considers diversity and international issues. In doing so, managers can use different approaches, such as task identification, surveying potential candidates to identify specific topics.

2.   Training and Development Objectives result from the needs assessment. They should state the desired behavior and the conditions under which these are to occur. These stated objectives become standards against which individual performance and the program can be measured.

3.   Program content. Needs assessment and learning objectives shape the program content to meet the needs of the organization and the participants.

4.   Learning principles. Training and development are more effective when the methods used match the learning styles of the participants and the type of jobs needed by the organization. Learning principles are guidelines to the ways in which people learn most effectively:

   a.   Participation; learning usually is quicker and longer-lasting when the learner participates actively.

   b.   Repetition; repetition etches a pattern into one's memory

   c.   Relevance; learning is helped when the material to be learned is meaningful

   d.   Transference; the more closely the demands of the training program match the demands of the job, the faster a person learns to master the job.

   e.   Feedback; gives learners information on their progress.

Training is likely to be more effective if these principles are more frequently reflected in training.

Effective training may be on the job or off the job training - there is no single best technique. The most appropriate learning principles need to be applied and the most appropriate techniques understood and chosen. Trade-offs exist in selecting training and development techniques, and the following factors have to be considered:

- Cost effectiveness
- Desired program content
- Learning principles
- Appropriateness of the facilities
- Trainee preferences and capabilities
- Trainer preference and capabilities

Training and development programs and activities must be evaluated systematically in order to verify a program's success. Effective criteria that are used to evaluate training focus on outcomes and trainers are usually concerned about:

1. The reactions by trainees to the training process and content
2. The knowledge or learning perceived through the training experience
3. Changes in behavior that result from the training
4. Results or improvement that can be measured in the individuals or the organization, such as lower turnover, fewer accidents or less absenteeism.

Long term development of human resources – different from training for a specific job - can bring several benefits, such as reducing the company's dependence on hiring new workers. If employees are developed properly, then the job openings found through human resource planning are more likely to be filled internally. Moreover, promotion and transfers show employees that they not only have a job but also a career. The employer also benefits from increased continuity in operations, and from employees who feel greater commitment to the firm. Human resources development is also an effective way to meet several challenges, including employee obsolescence, international and domestic workforce diversity, technical changes, affirmative action and employee turnover. The department can maintain an effective workforce by meeting these challenges.

D.4. Compensation

To manage staff behavior, organizations usually link the reward system with its control system. The linkage between reward and performance determines the incentive structure to influence individuals within organizations. Reward systems will also influence (and be influenced by) the organization's values, norms and culture.

The compensation system is an important strategy in a hospital, as it usually accounts for the biggest proportion of the organization's costs. It will attract qualified persons to join the hospital and become a stimulant for the staff to improve their work performance. The system should be designed on fair and competitive and transparent principles. If the organization gives attention both to internal and external factors to determine the amount of compensation, these principles will fulfill the expectations of staff.

Compensation considers two aspects, i.e. extrinsic and intrinsic compensation.

a) Extrinsic Compensation: this form does not have a direct link with job completion, but includes broader categories such as salary, incentives (bonus, allowance, promotion fee, individual gratification).
b) Intrinsic Compensation: since money is not always the only motivation for a person, sometimes different forms of appreciation are necessary to motivate staff and to improve their attitudes in order to give their best for the organization. This kind of compensation does have a direct link with job completion.

It should be understood by senior managers that reward is not only about money - the staff also need social acknowledgment in their workplace and the recognition of their existence in the organization. The organization gives rewards in the hope that the staff feel more motivated to work and to extend their performance and innovation within an ongoing improvement process. Organizations should also keep innovation as a priority within their reward system to stay competitive with other organizations, and to attract new qualified staff and to maintain good and outstanding employees.

E. Operation Management and Logistics

E.1. Operation Management

All organizations make products. These products can be tangible goods – such as cars, books, computers, etc. - or intangible products – such as insurances, education, health services, etc. Most products are a combination of goods and services. At a hospital, the product is a package that includes goods – such as drugs – and health services.

Every organization has activities that make products. These activities are the "operations." So, we can define operations as all the activities that are directly concerned with making the products. In principle, operations are very simple. Organizations take a variety of inputs (such as raw materials, money, people, and machines), and perform operations (such as manufacturing, serving, and training), to give outputs (which include goods, services and waste material).

Operations Manager. Operations managers are responsible for all aspects of operations.

Figure 50. Operations make the products that satisfy customer demand
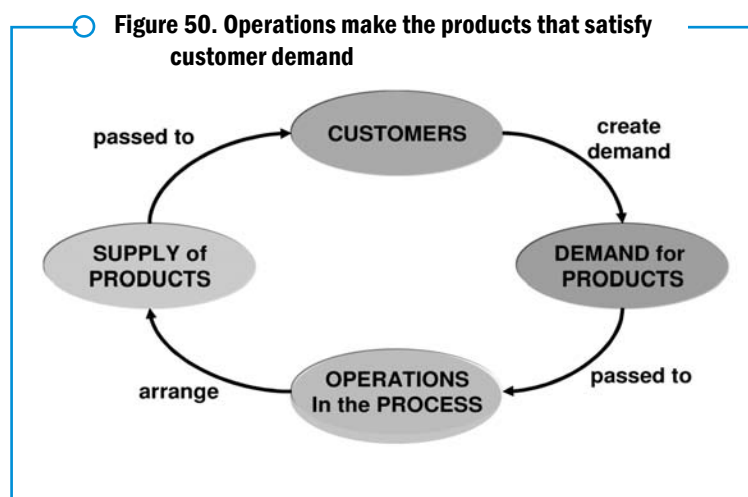
The Operations Manager responsible for specific operations means that their job includes the following:

First, they are concerned with each step in providing a product. They determine what equipment, labor, tools, facilities, materials, energy, and

information should go into an operating system and how these inputs can best be obtained and used to satisfy the requirements of the market place.

Second, operations managers are also responsible for critical activities such as

- Planning – establishing goals, the means of achieving these goals, and the timescale.
- Organizing – structuring the organization in the best way to achieve its goals.
- Staffing – making sure there are suitable people to do all jobs.
- Directing – coaching and guiding employees.
- Motivating – empowering and encouraging employees to do their job well.
- Allocating – assigning resources to specific jobs.
- Monitoring – checking progress towards the goals.
- Controlling – making sure the organization keeps moving towards its goals
- Informing – keeping everyone informed of progress.

In an organization, operations managers do not make their decisions in isolation, but work within the overall business context and co-ordinate their decisions with other functions within the organization. One traditional view is that three central functions must exist in all organizations:

- Sales/marketing – identifies customer demand, stimulates new demand, collects and analysis
- Operations management –is responsible for the process that actually makes the goods and services, and
- Accounting/finance – raises capital, invests funds, records financial transactions, collects money, pays bills, collects cost information, and maintains accounts.

These central functions are directly concerned with the product. There are obviously other important functions, such as human resources, research and development, information systems, and administration & public relations. However, these supporting functions can either be included in one of the central functions, or are not directly concerned with the product.

Different organizations emphasize different functions. A hospital might put more effort into controlling its operations, but it still needs to market its products and control its finances. An insurance company may focus on its finance performance, but it still has to deliver products to customers.

Operations Management. The importance of operations management has increased dramatically in recent years. Significant foreign competition, shorter product and service life-cycles, better-educated and quality-conscious consumers, and the capabilities of new technology have placed increasing pressures on the operations function to improve productivity while providing a broader array of high-quality products and services.

The Association for Operations Management defines operations management as follows; "the field of study that focuses on the effective planning, scheduling, use, and control of a manufacturing or service organization through the study of concepts from design engineering, industrial engineering, management information systems, quality management, production management, inventory management, accounting, and other functions as they affect the organization"

Operations management is an area of business concerned with the production of goods and services, and involves the responsibility of ensuring that business operations are efficient in terms of using as little resources as needed, and effective in terms of meeting customer requirements. It is concerned with managing the process that converts inputs (in the forms of materials, labour and energy) into outputs (in the form of goods and services).

Conversion of input to output

Operations management deals with decision making related to productive processes to ensure that the resulting products are produced according to specifications, in the amounts and by the schedule required, and at minimum cost. Inputs of materials, labor, and resources are used to obtain products using one or more conversion/transformation processes, thereby adding value. Figure 50 depicts this process.

Figure 51. Conversion of Input to Output

INPUT	CONVERSATION/ TRANFORMATION	OUTPUT
Materials Energy Customers Information	Man Process Machines Plants	Products Services Ideas
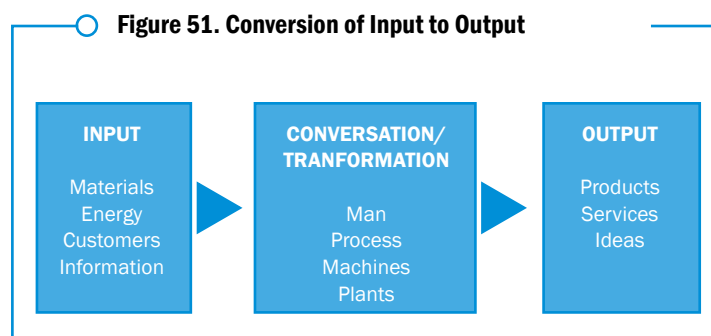
Operations management begins with high-level business plans and strategies, over both the long and short run.

The Ten Principles of Operations Management (APICS, 2007).

1. **Principle of Reality**. Neither the Theory of Constraints nor Lean Principles nor Total Quality Management nor any other technique will solve all your problems. There is no universal solution.

2. **Principle of Organization**. All aspects of production must be organized into a coherent whole. Anybody can throw parts together and get shipments out the door but that does not assure profits. If profits are to be predictable and consistent then all activities leading to profits must be predictable and consistent with each other.

3. **Principle of Fundamentals**. Strict adherence to the fundamentals is the foundation upon which all effective production is based. Maintaining accurate inventory records, BOMs, general systems disciplines and the like will take you 80% of the way to success. The proper application of lean efforts, TOC or whatever can only take you the final 20%.

4. **Principle of Accountability**. People will not put an effort into that for which they are not held accountable. Rewards and consequences, on the other hand, will result effort in great.

5. **Principle of Variance**. Variances are inherent processes in every process. When the system's goal is to reduce costs, variances must be measured and controlled. When the system's goal is to increase options or enhance variety, variance must be encouraged.

6. **Principle of Causality**. The problems managers face are often symptoms – urgent shipments, late quotes, expediting, etc. Unless the underlying causes are resolved, managers will find themselves repeatedly fighting the same problems. Symptoms are residuals. Get rid of them by resolving the root causes.

7. **Principle of Managed Passion**. Nothing drives a company forward like employees with a passion for their jobs. Nothing drags a company down like employees just putting in time.

8. **Principle of Humility**. You were not hired because you knew everything or had experienced everything. Don't hesitate to admit ignorance -- pride is expensive. Admit ignorance, get help, learn, move on.

9. **Principle of Success**. Define what constitutes success. Markets change so the definition of success must often be revised. This will require rethinking the previous principles. This principle keeps the other principles relevant.

10. **Principle of Change**. Every manufacturing solution is temporary because every solution is inadequate in some way. Eventually, a new solution will be found that excels in the ways in which the old one was inadequate.

E.2. Physical Assets Management (PAM)

E.2.1. The History of Physical Assets Management

The United Kingdom, Australia and New Zealand are the leading countries in the world in terms of their holistic approach to Physical Assets Management (PAM). Industrial and political imperatives have forced a radical re-think on how to get better performance-for-cost. Where the commercial or safety impact of failure is high, it is clearly vital to find the right combination of risk, performance and cost. So airlines, oil and gas, power, and healthcare industries have tended to develop the best way to manage their assets. However PAM is mostly concerned about the people – shared understanding, cross-functional collaboration and teamwork, problem-solving, and etc. The relevant PAM disciplines and procedures have generally emerged from highly structured or regulated industries – initially the armed forces, airlines and nuclear sectors but now rapidly spreading to power, water, healthcare (hospitals), and other utility and service sectors.

E.2.2. The Functions of Hospital Assets

A hospital manages assets for a number of reasons. Generally, an asset becomes very important because it has the following functions:

1. It assists an organization in fulfilling its purpose or mission;

2. It provides some quantifiable "value" to the organization;
3. It can be a necessary tool or resource that is required to "do your job."

Hospital assets can be categorized into physical or non-physical assets. Non-physical assets in hospital such as a process, a trademark, a patent, reputation, and relationships are valuable for creating a good image for the hospital. Besides non-physical assets, there are many physical assets in a hospital that can be classified as:

■ **Buildings** include all physical facilities that are part of a hospital, including the medical (wards, clinic, etc.), administrative (offices) and supportive facilities (morgue, laundry, garage workshop, kitchen, etc.).

■ **Plant or compound**, includes everything around the buildings like the area around the facilities, the driveway, and the fence, but also the major utilities of the project, like the energy supply (e.g. generator), water supply (e.g. water well), and incinerator; plus means of transportation, like vehicles and motorcycles.

■ **Equipment** (medical, office and facility equipment) refers to the more technical instruments and utensils used to perform medical, administrative and/or supporting activities.

Medical equipment is a key hospital physical asset that the hospital uses to prevent and cure sickness and injury. Therefore, compared to other assets, medical equipment is closer to the core activity of the hospital. Generally, hospitals require their medical equipment to be accurate, safe, economic, and available. Physical assets management can help hospitals to ensure that all the medical equipment used by the hospital is available when needed to serve patients and is working accurately, safely and economically.

In reality, there are many problems in managing medical equipment. From the management perspective, these problems can be caused by:

1. Improper equipment selection and purchasing
2. Unstable environment of use
3. Users not properly trained
4. Planned maintenance not conducted properly and on schedule
5. Equipment failures (breakdowns) not managed.

E.2.3. Proactive Approach

In managing their assets, hospitals can choose either a reactive approach or a proactive approach. Usually, district hospitals in Indonesia (RSUD) follow both approaches. The hospital management develops a plan for managing their assets, but sometimes the management has to make some reactive decisions regarding their assets. For example, many hospitals make reactive decisions in response to equipment breakdowns by calling upon suppliers to make repairs. The reason why the RSUD cannot employ proactive approach well is often due to its limited budget; the government does not allocate enough money for managing the hospital assets. However, where possible, hospitals are encouraged to focus on the proactive approach in managing their assets avoiding asset or equipment failures before they happen.

The proactive approach to managing hospital assets has five elements: planning and purchasing, building stabilization, user training, planned maintenance and repair, and general administration. These five elements can be seen as follows:

Figure 52. The Five Elements of Proactive Approach in Managing Hospital Assets
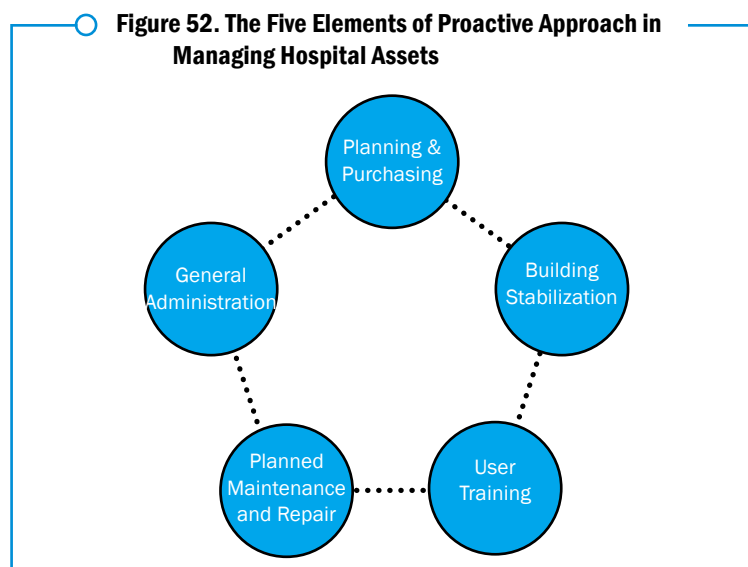
a. **Planning and Purchasing**

Planning and Purchasing is the first element that will determine the performance level of how the hospitals manage their assets. The failure to develop a good plan and make rational decisions in purchasing hospital assets will cause problems in the future for managing hospital

assets. The facts show that some hospitals (RSUD) do not prepare a plan seriously for managing their assets, and they purchase too many assets with the differing brands or models of equipment. Also, hospitals often accept higher purchasing prices and higher ownership costs (maintenance, repairs and consumables) for their assets.

b. Building Stabilization

Building stabilization is a second element in managing hospital assets in a proactive approach. Generally, RSUD has a built environment with buildings that are too hot, too humid, with unstable power, inadequate air handling, and poor water supply. Often facilities are dirty. This situation is common in RSUDs, especially the RSUDs that are located in the areas far away from Jakarta. These built environments create an unstable environment for equipment and will lead to damage and other negative effects on the performance of assets. So, the creation of a stable built environment is important in terms of both the short and long term.

c. User Training

User training is the third element of the proactive approach. Most RSUDs have the same problems in user training for their medical equipment or other assets. For example, users do not receive much equipment training in hospital, they are not oriented into new hospital environments, and they are not properly trained by the suppliers. The impact of insufficient training results in the risk of damaging of equipment when using it, including injury to patients or staff – or negative effects on diagnosis or treatment. Sometimes, the management of the hospital decides to select individuals for the training program for specific equipment who are not involved in ongoing use of the equipment. Obviously, the management of hospitals should prepare sufficient training for those staff that will be using the equipment or hospital assets.

d. Planned Maintenance and Repair

Hospital assets need to be maintained and repaired properly. The management of hospitals should prepare planned maintenance and repair for all hospital assets. Planned maintenance and repair are the fourth element of physical assets management. There is often a limited budget that is not adequate for planned maintenance and repair. Frequently, planned maintenance and repair are only conducted as a paperwork exercise for hospital accreditation and ISO, and not implemented in practice. Planned maintenance and repair can ensure

that equipment or assets are working accurately and safely and also can reduce equipment failures and breakdowns. When equipment breaks, there is rarely an investigation for the cause of the breakdown. For the majority of repairs, outside service sources are called upon to make expensive repairs, and the quality of repair work is not closely monitored. When a piece of equipment does break – there should be a system for finding the cause of the breakdown and for implementing preventive measures to reduce the potential of future breakdowns from the same or similar causes. Also, repair frequency and costs needs to be monitored for both vendor and hospital management, and used in future equipment purchasing decisions. The management of hospitals should benefit significantly from developing a plan to maintain and repair their assets adequately.

e. **General Administration**

Hospital assets should be administered properly to understand the history of the assets. Adequate assets information is useful for planning and purchasing activities, preparing a planned maintenance and repair, and building environment stabilization. Usually, RSUDs have administrated their assets but this is often not complete, so the information from assets administration cannot be used to support hospital physical assets management. Some RSUDs management cannot decide when their assets should be maintained. This can happen because the RSUDs do not have adequate information on their assets. The lack of some assets information means the management of the hospital cannot determine the overall value of the hospital. Considering the importance of asset administration, the hospital management should administer their assets properly.

E.2.4. The Importance of Leadership and Culture in PAM

To implement the five elements of physical assets management, the management of hospitals has to develop a strong organizational culture and leadership. Without a strong culture and leadership, the worker will not have commitment and consistency for implementing the five elements. A strong culture cannot be built without proper leadership. The important thing is that the leader should show their involvement in the process of building a strong culture and implementing the methods available to them.

Unfortunately, some leaders in RSUDs are very busy with their technical jobs and only have ittle time to build the culture needed for physical assets management. On the other hand, the government has given little attention to maintain their assets to date and have not prioritized assets management as one of the things that should be managed well.

Some RSUDs show weak physical assets management because their leaders do not have a vision about managing assets, and there is no strong culture related to the ownership of assets. Generally, staff and workers at the RSUDs do not appropriately care for their hospital assets, not using the assets accurately, not administering the assets correctly, and not storing the assets properly.

The figure below shows the relationship between the five elements and culture and leadership.

Figure 53. Relationship between Five Elements and Culture & Leadership
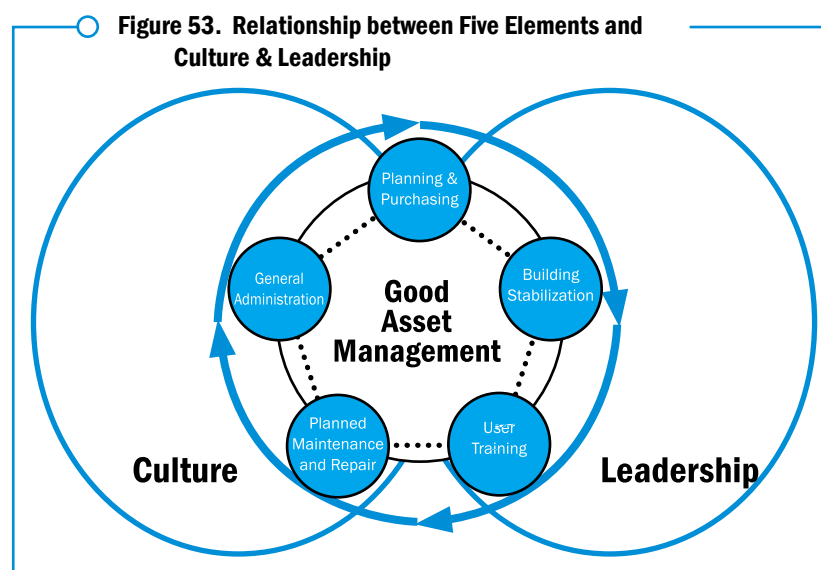
E.3 Inventory Management

The managers of hospitals have a responsibility to manage their inventory properly. Too much hospital inventory will lead the hospital to operate inefficiently, while too little inventory will increase the probability of stock out and disrupt health service activities in the hospital. Consequently, hospital managers have to decide on the level of inventory that will guarantee continuing health service activities and enable the hospital to provide health services efficiently.

E.4.1. Understanding the Inventory

Hospital managers define Inventory as the total amount of goods and/or materials contained in a hospital at any given time. Hospital managers need to know the precise number of items on their shelves and storage areas in order to place orders or control losses. They also need to know how many units of their goods and or/materials are available for customer orders.

The word 'inventory' can refer to both the total amount of goods and the act of counting them. Many companies take an inventory of their supplies on a regular basis in order to avoid running out of popular items. Others take an inventory to ensure the number of items ordered matches the actual number of items counted physically. Shortages or overages after an inventory can indicate a problem with theft (called 'shrinkage' in retail circles) or inaccurate accounting practices.

Inventory Cycle. When the hospital manager assumes that demand for a health service is constant and certain, the inventory cycle can be described as follows:

R = Reorder Point   Q = Order Quantity
L = Lead Time   d = Average Daily Demand

Reorder point = Expected demand during Lead Time = D x L
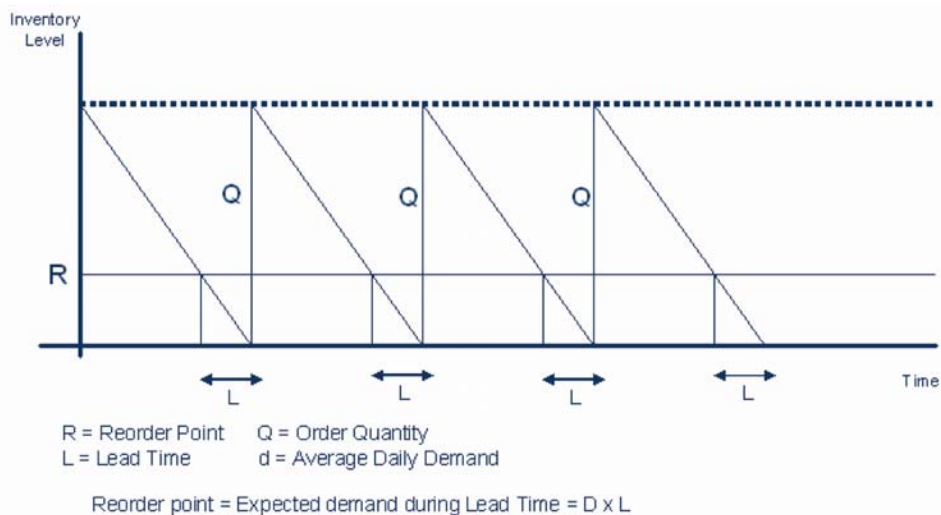
In this situation, the hospital manager will order in the same amount of goods or/material for each order. The order will be released when the quantity of inventory reaches the R or reorder point. The reorder point can be identified through the formula R = d x L, where L is Lead Time. In the

real situation, however, there is no constant and certain demand, and the patterns of consumption and reordering are less regular.

E.4.2. The reasons for keeping an inventory

There are many reasons for keeping an inventory, but the main reasons are:

1. Lead-Time - The time lags present in the supply chain, from supplier to user at every stage, require the hospital managers to maintain a certain amount of inventory to use in this "lead time".
2. Uncertainty - Inventories are maintained as buffers to meet uncertainties in the demand, supply and movement of goods.
3. Economies of scale - Ideal conditions of "one unit at a time at a place where the user needs it, when the hospital manager needs it" principle tends to incur lots of costs in terms of logistics. So bulk buying, movement and storing brings in economies of scale, but requires inventory.

E.4.3. Decisions in Managing Inventory

The hospital manager has to make a number of decisions when managing the inventory. The four important decisions are:

1. determine the order quantity of goods or materials when orders are placed
2. determine the level of safety stock
3. determine when to place the orders (reorder point)
4. determine the maximum level of inventory

These four decisions depend on the approach to managing inventory. There are two approaches that can be chosen by the hospital manager: the continuous review approach and the periodic review approach. The continuous review approach assumes that the order quantity is similar in each order, while the periodic review approach assumes that the period between one order and others is similar.

Continuous Review Approach

This approach tries to maintain a fixed quantity when orders are placed, but the interval between the reorder points will be different. We can see

the description of this approach in the following figure.

Figure 54. A Continuous Review Approach

Inventory Level

R = reorder point   Q = Order quantity
L = Lead time   d = Average daily demand

Q   Q   Q

R

Time

L   L   L   L

Stock-outs are possible
Reorder point = Expected demand during Lead-Time + Safety Stock
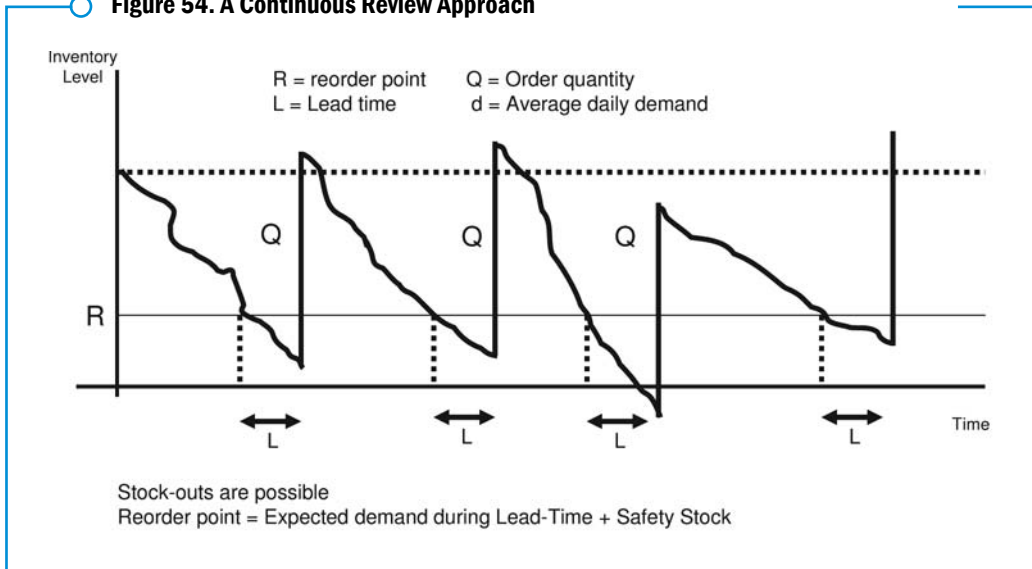
Under this approach, we only can make three decisions:

1. the order quantity of goods or materials when orders are placed. This order quantity can be counted through this formula:

$$EOQ = \sqrt{2SD / iC}$$

where:

EOQ = Economic Order Quantity
S = cost per order placed, or set up cost, rupiah per order
D = demand rate, unit per year
i = carrying rate, percent of rupiah value per year
C = unit cost, rupiah per unit

2. The level of safety stock or buffer stock can be counted through this formula:

$$s = z\sigma$$

where:

s = safety stock (buffer stock)
z = safety factor
σ = standard deviation of demand over the lead time

3. The reorder point can be calculated through this formula:

$$R = m + s$$

or

$$R = m + z\sigma$$

Where:

R = reorder point
m = mean (average) demand over the lead time
s = safety stock

The reorder point is set equal to the average demand over lead-time m plus a specified number of standard deviations σ to protect against stock out. By controlling z, the number of standard deviations used, one can control not only the reorder point but also the service level. A high value of z will result in a high reorder point and a high service level.

There are several different ways to express service level:

- Service level is the probability that all orders will be filled from stock during the replenishment lead time of one reorder cycle
- Service level is the percentage of demand filled from stock during a given period of time (e.g., a year).
- Service level is the percentage of time the system has stock on hand.

The percentages in the table below are estimated from a normal distribution, and represent the probability that demand will fall within the specified number of standard deviations from the mean. Given a particular service level desired, it will be possible to determine z and then the reorder point from the table below.

For example, suppose we are managing a cough remedy namely Obat Batuk Hitam (OBH) in a clinic. We have the following data:

Average demand = 200 bottle per day
Lead time = 4 days for resupply from vendor
Standard deviation of daily demand = 150 bottle
Desired service level = 95%
S = Rp 20,000 per order
i = 10% per year
C = Rp 10,000 per bottle

If we assume that the clinic is open 365 days a year, then the average annual demand is:

$$365 \times 200 = 73{,}000 \text{ bottles a year.}$$

The Economic Order Quantity is

$$\sqrt{\frac{2 \times 20.000 \times 365 \times 200}{10\% \times 10.000}}$$

EOQ = 1,709 bottles

The average demand over the lead time is 200 bottles a day for 4 days; therefore

m = 4 (200) = 800 bottles. The standard deviation of demand over the lead time is

$$\sqrt{4\,(150)}$$

= 300 bottles

the 95 percent level requires a safety factor of z = 1.65 (see table normal demand percentages). Thus we have

Safety stock = zσ = 1.65 (300) = 495 bottles

And the reorder point is

R = m + zσ
R = 800 + 495 = 1,295 bottles

The continuous review approach decision rule is to place an order for 1,709 bottles of OBH whenever the stock position drops to 1,295 bottles. On average, 43 orders will be placed per year. The actual time between orders will vary, however, depending on demand.

Periodic Review Approach

In some cases the goods or materials stock position is reviewed periodically rather than continuously. Suppose a supplier will only take orders and make deliveries at periodic intervals, for example, every 3 weeks, as his

truck makes the rounds to your hospital. In this case, the stock position is reviewed every 3 weeks and an order is placed if goods/materials are needed.

The periodic review approach assumes that the stock position is reviewed periodically and the demand is random. The stock position is reviewed at a fixed interval. When the review is made, the stock position is "ordered up" to the target inventory level. The target inventory is set to cover demand until the next periodic review plus the delivery lead time. A variable quantity is ordered depending on how much is needed to bring the stock position up to target.

A graph of the operation of this approach is shown in the figure below. The stock position drops on an irregular basis until the fixed review time is reached. At that time, a quantity is ordered to bring the stock position up to the target level. The order arrives later, after lead times L; then the cycle of usage, reorder, and stock receipt repeats.

Figure 53. A Periodic Review Approach

TI = Target Inventory Level   L = Lead time   D = Average demand

Stock-outs are possible
TI = Expected demand during Lead-Time + Safety Stock
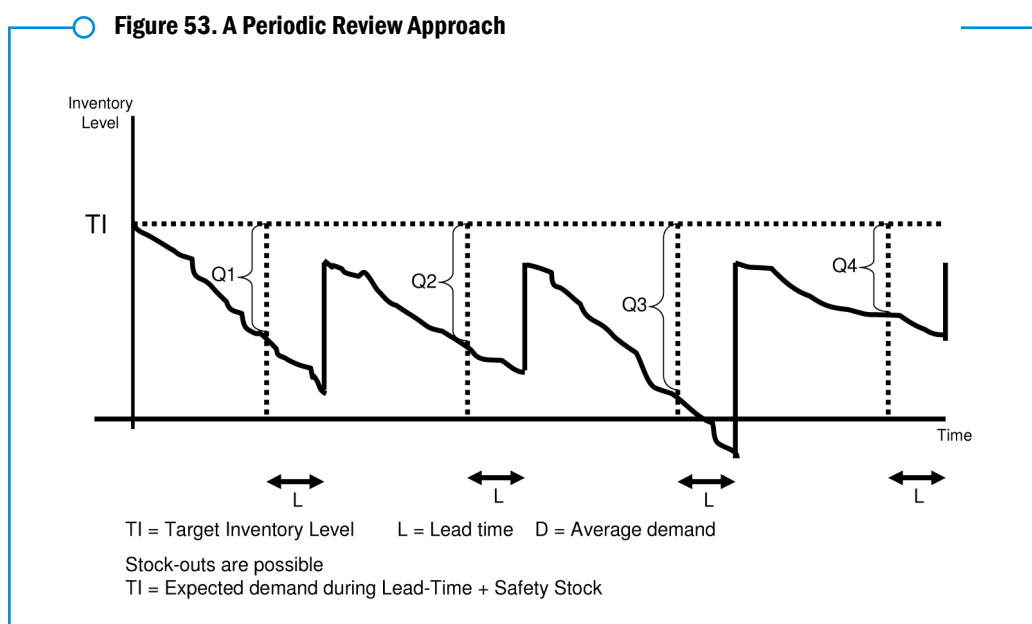
This approach functions in a completely different manner than Continuous review approach because: (1) it does not have a reorder point but rather a target inventory; (2) it does not have an economic order quantity, since the quantity varies according to demand; and (3) in the Periodic review

approach, the order interval is fixed, not the order quantity.

Optimal review interval can be estimated by using this formula:

$$P = Q/d$$

Where:

P = Optimal Review Interval
Q = Quantity, Economic order quantity (EOQ)
d = Daily demand

The target inventory level can be set by a specified service level. In this case the target inventory is set high enough to cover demand over the lead time plus review period. This coverage time is needed because stock will not be ordered again until the next review period, and that stock will take the lead time to arrive. To achieve the specified service level, demand must be covered over the time P + L (lead time) at the average level plus a safety stock. Thus we have

$$TI = m' + s'$$

Where:

TI = Target Inventory
m' = average demand over P + L
s' = Safety stock

Safety stock should be set high enough to assure the desired service level. For safety stock, we have

$$s' = z\sigma'$$

Where:

 σ' = the standard deviation over P + L
z = safety factor

By controlling z, we can control the target inventory and the resulting service level provided.

For example, suppose we are managing the drug Obat Batuk Hitam (OBH) in a clinic by using the Periodic Review Approach. We have the following data:

Average demand = 200 bottle per day
Lead time = 4 days for resupply from vendor
Standard deviation of daily demand = 150 bottle
Desired service level = 95%
S = Rp 20,000 per order
i = 10% per year
C = Rp 10,000 per bottle

If we assume that the clinic is open 365 days a year, then average annual demand is:

365 x 200 = 73,000 bottles a year.

The Economic Order Quantity (EOQ) or Q is

$$EOQ = \sqrt{\frac{2 \times 20.000 \times 365 \times 200}{10\% \times 10.000}}$$

EOQ or Q = 1,709 bottles

P = Q/d = 1,709/200 = 8.5 or 9 days.

The formula for target inventory is

TI = m' + zσ'

In this case, m' is the average demand over P + L = 9 + 4 = 13 days. Thus we have

m' = 13 x 200 = 2,600 bottles.

The standard deviation σ' is for the period P + L = 13 days, thus we have

$$\sigma' = \sqrt{13} \times 150$$

= 541 bottles

where 150 is the daily standard deviation and 13 the number of days.

Therefore

TI = m' + zσ'
TI = 2,600 + z (541)

For a service level of 95%, we need z = 1.65
Thus, TI = 2,600 + (1.65 x 541) = 3,493 bottles.

The Periodic review approach rule is to review the stock position every 9 days and order up to a target of 3,493 bottles of OBH (Obat Batuk Hitam).

It is interesting to note, at this point, that the Periodic review approach requires 1.65 x 541 = 893 bottles of safety stock, while the same service level is provided by the Continuous review approach is only 495 bottles of safety stock. A Periodic review approach always requires more safety stock than a Continuous review approach for the same service level. This occurs because the Periodic review approach must provide coverage over a time of P + L, while continuous review approach must protect against stock out only over the time L.

E.5. Quality Management for Hospitals

Hospital managers have a responsibility to improve the quality of work life (QWL) in order to increase the quality of health services. The managers improve the QWL through improving the physical and non-physical environment. The physical environment is related to buildings, medical equipment, wards, etc., while the non-physical environment is related to standard operating procedures, appraisal systems, remuneration systems, social system, etc. Generally, the private hospitals in Indonesia have a better QWL than the public hospitals, so the perception is that they can perform better in delivering health services than public hospitals. The stigma evident in the commonly held opinion that "the public hospitals always deliver health service with low quality" arises because the QWL in the public hospitals is not managed well.

Quality management is a key to improve QWL in a hospital. The quality movement's gurus such as Deming, Juran, Feigenbaum, Ishikawa, and Taguchi have contributed to the development of quality management. Their ideas have been applied successfully to small or large organizations in the public, private, manufacture or service sectors. There have been three groups of gurus since the 1940's:

■ *Early 1950's:Americans who took the messages of quality to*

Japan
- *Late 1950's: Japanese who developed new concepts in response to the Americans*
- *1970's-1980's: Western gurus who followed the Japanese industrial success*

Deming, for example, has developed the concept abbreviated as PDCA: Plan Do Check Act. This simple concept has provided simple guidance for organizations that apply quality management systems. According to PDCA, the manager should (1) plan every activity, (2) do the activities according to the plan, (3) check the activities that already have been done, (4) take some actions to solve the problem or to improve the process. The PDCA concept has been applied widely in organizations around the world.

Another concept in quality management that has made an impact around the world is standardization. The idea of standardization has pushed some countries to develop quality standards for goods and services. For instance, we have quality standards such as ISO for European countries, Malcolm Baldridge for United States of America, Standar Nasional Indonesia (the Indonesian National Standard), European Foundation for Quality Management in Europe etc. These standards of quality can assure clients that goods or services produced by the organizations follow the standard. Now, some private and public hospitals in Indonesia have commenced applying international standards such as ISO, Malcolm Baldridge or Joint Comission International Quality Standard. For example, a private hospital, Rumah Sakit Pertamina Pusat (RSPP) applies both ISO and Malcolm Baldridge quality standards. Similarly, the public hospital owned by the government of Daerah Khusus Ibukota (DKI) or Jakarta, Tarakan district hospital, implements the ISO quality standard.

The directors of private and public hospitals have to understand that quality management is no longer an optional extra. It means that good quality management for a hospital is a minimum requirement and should not be considered merely an option designed to win an award or competition. The directors or managers of a hospital must implement quality management in all aspects of hospital operations. Regardless of the quality management systems used, the most important factor underlying implementation of a quality management system in the hospital is commitment. "If we are truly committed to quality, any reasonable method will work. If we are not, the

most elegantly constructed of mechanisms will fail" (Donabedian, 1996).

Quality Management Tools. The directors and managers in a hospital who want to implement quality management can use the seven basic tools for quality management. These tools include Histograms, Pareto Charts, Run Charts, Scatter Diagrams, Control Charts, Flow Charts, and Cause and Effect Diagrams. These tools are very useful to help the directors or managers make some improvements and have been described in the previous chapter.

Through these tools, the directors or managers of hospitals can identify operational problems and determine the core problems. When the core problems are identified, the directors or managers can decide what appropriate actions need to be taken to solve the problems and make some improvements. In addition to these seven quality management tools, there are some others tools such as Failure Mode Effects Analysis (FMEA), the house of quality, etc. The directors or managers of hospitals have to understand how these quality management tools work and implement them to make improvements in their hospitals.

Quality Management and Cost. There is an assumption in Indonesia that quality costs. That is, the higher the quality, the more it costs. "The Mercedes is better than the Hyundai, and it costs more." "Medical care is expensive: therefore the higher the quality, the higher it costs." At a certain level, the cost/quality relationship is valid, such as the comparison of health services in a developing country (with expenditures of $2 per capita; with that of the United States (expending more than $2000 per capita). However, within a given range, it is a myth that higher quality necessarily relates to higher costs.

The Japanese invasion of the United States' auto industry demonstrated that higher quality can be achieved with lower costs. Indeed, W. Edward Deming (Deming, 1982), an American statistician who was instrumental in establishing the Japanese managerial revolution after World War II, proposes that poor quality increases "complexity," which in turn increases cost. Complexity is defined as (l) mistakes and defects, (2) breakdowns and delays, (3) inefficiencies, and (4) variations. Conversely, he shows how improving quality reduces complexity and higher productivity and lower cost follows. Crosby (1987) suggests that 40% of operating costs are spent on nonconformance to quality. An example of the cost of nonconformance

to quality in health services is the need to repeat or correct previous work, such as in re-admission to hospital and the treatment of health-care associated infection problems. Duplication of service is another example, as are the costs of inspection and regulating health services. Inefficiencies and the high cost of liability insurance are other examples of high costs of nonconformance to quality.

In health services there is some evidence that higher quality hospital care, may be related to lower costs. Shortell et al. (1976) in their study of 31 Massachusetts hospitals found that hospitals with higher cost per case had higher medical and surgical mortality after controlling for severity. Longest (1978) examined direct costs and quality in IO general hospitals in Atlanta, Georgia, and found evidence that hospitals that provide higher quality services tended to have lower direct costs and to take fewer person-hours to provide them. On the other hand, Scott et al. (1979) reported better outcomes of surgical care related to higher expenses per patient day. These discrepancies are at least partially attributable to different units of measure, but together are consistent with findings of Schulz et al. (1983) of no relationship between cost and quality measures. That is, higher quality doesnot necessarily mean either lower or higher costs. In their study of psychiatric units, Schulz et al. (1983) found that some units had both lower cost and higher quality, some had high quality but also higher costs, others had lower cost but also lower quality, and another group had unfavorable outcomes of both lower quality and higher costs. As stated by Donabedian (1980): (1) quality costs money, (2) money does not necessarily buy improvements in quality, and (3) some improvements in quality are not worth the added cost.

E. 6. Management Information System

Planning and developing the Hospital Management Information System: processing transaction and operational management

Initially computers in hospitals and other health care facilities were used for billing, payroll, accounting and so forth. The first applications related to health were those requiring arithmetic operations and were related to the accounting functions such as registration-admission, discharge and transfer, census, hospital statistics, abstracting of medical

records and indexing. Today, by using computers, we can store data and information and also retrieve it. Total hospital information systems can automate laboratory results reporting, physician order entry, medication administration, inventory control and so forth (Huffman 1994). Therefore, both clinical services and management can be supported by information systems. This intelligent use of information does not occur spontaneously. Managers have to make sure that it occurs in a systematic way and is formally planned (Austin 1992).

The WHO classification of terms and definitions that are commonly used in Hospital Information Systems gives a sense of how one concept fits with the next (WHO 2004):

- **System** is a group of components that work together to carry out a common objective.
- **Information system** is "a system that provides information support to the decision-making process at each level of an organization".
- **Health Information System** is "a system that integrates data collection, processing, reporting, and use of the information necessary for improving health service effectiveness and efficiency through better management at all levels of health services".
- **Health Management Information System** is an information system that is designed especially to assist in the management and planning of health programs as opposed to delivery of care.

As stated before, information systems can support patient care (clinical information systems) and administrative operations. Today, the hospital can develop interactive systems where administrative and clinical information systems operate independently but have interfaces with other existing systems through networking. Moreover, with increasing competition and the changing business environment, hospitals have to have reliable data collection and information. Generally, most hospital managers rely heavily on their computer systems today to provide important information needed to survive in competition. Some specific administrative applications can be categorized as follows (Austin 1992):

- Financial information systems
- Human resources information systems
- Facility utilization, scheduling and communication systems
- Materials management systems

- Facilities management systems
- Office automation systems

One type of information that is important to help management in guiding operational performance is financial information. With increasing competition and government regulations, health services organizations must have timely and accurate financial information. Therefore, the purpose of a financial management program includes (Austin 1992):

- Providing management with quantitative data for making least-cost investment decisions
- Developing effective and efficient operational financial subsystems
- Providing management information to help controlling and evaluating operations.

Two basic approaches can be used to develop a financial information system. First, health services organization can develop or purchase individual financial applications, independent of one another, that provide information to the various components of the organization. Second, health services organizations can choose a fully integrated financial information system that will bring related information together for planning, monitoring and control.

Today, financial software is available for use on computers that can be chosen by hospitals. Besides financial information, hospitals also need information systems for their daily operation activities. Human resources in hospitals are an important resource. Therefore, hospitals have to have good information systems to assist management for planning and productivity analysis. To achieve efficient facility utilization, information systems have been designed to monitor inpatient occupancy rates, clinic and emergency room activity and the utilization of individual service facilities such as operating suites, and advance bookings and scheduling for facilities. In terms of material management systems, information systems have been used for computerized purchasing, inventory control systems, computerized menu planning and food service management. In addition, information systems can be used for facilities management: planning, management and maintenance of physical facilities include monitoring of preventive maintenance, energy management and project scheduling and control systems. Another use of information systems is for office automation, which includes word processing, electronic mail,

scheduling for meetings and maintenance of calendars for management personnel (Austin 1992). Those systems can operate independently and have interfaces with other existing systems through networking to enhance the hospital quality service and patient safety.

Planning and development of Hospital Management System: decision support and knowledge management

As we know, many organizations have developed integrated systems combining financial and clinical data. However, these integrated systems are primarily still oriented toward day-to-day administrative operations rather than management planning and control. Therefore, systems to support management decision making are being developed in larger institutions and health services systems.

A decision support system has to be designed to function in the organizational environment in which it will operate. An effective decision support system must be able to provide control to management personnel using the system. The survival of an organization also requires a strong decision support system as a management tool and uses it throughout the organization. Usually decision support systems are applied in planning and marketing activities, case-mix analysis, resource allocation and productivity analysis. Moreover, hospitals can develop or purchase their own internal decision support systems, or they can use generalized systems from associations or commercial sources.

A good decision support system must be supported by useful management information. Information is more than just data, and needs to be relevant, sensitive, unbiased, comprehensive, timely, action oriented, uniform, performance targeted and cost effective. Moreover, to implement a decision support system, hospitals need to develop a management data base that includes several elements such as: "units of service produced, resources consumed in producing those services, data for assessing the quality of services provided and indicators of the effectiveness of service provided in meeting perceived community health needs" (Austin 1992).

There are a variety of decision support information needs in the health care organization. They can be categorized into several groups such as:

- Information to support strategic planning and marketing

- Information to assist in resource allocation
- Information to support performance monitoring and assessment
- Information for evaluation of products and services

Managing Hospital Management Information System Project

There are five important steps in developing effective information system. These are: systems analysis, selection of a design approach, system design, implementation and maintenance. WHO (2004) recommends the following more detailed sequence of steps in developing the Health Management Information System:

1. Review the existing system
2. Define the data needs of relevant units within the health system
3. Determine the most appropriate and effective data flow
4. Design the data collection and reporting tools
5. Develop the procedures and mechanisms for data processing
6. Develop and implement a training program for data providers and data users
7. Pre-test, and if necessary, redesign the system for data collection, data flow, data processing and data utilization
8. Monitor and evaluate the system
9. Develop effective data dissemination and feedback mechanisms
10. Enhance the Health Management Information System

At various points in the system development cycle, decisions can and should be reached to enhance the system. At one extreme, if the data show that costs will be prohibitive or the proposed system will not provide the anticipated benefits, then the project can be cancelled, or radically revised. Project managers have to understand that the organizational culture and human factors can affect the system in operation – particularly since information systems are designed, operated and used by people. Incorporating open communication, well planned education and training, and heavy user involvement are keys to success in overcoming resistance to change, and designing a Health Management Information System that meets the hospital's needs. Moreover, hospital executive management needs to be sure that good project management practices are followed in the planning and design of information systems and always carefully monitor progress (Austin 1992).

Summary of module content

The content of this chapter is prepared for the managers who will manage the hospital from the corporate level perspective. After learning this module, the managers or prospective managers should have knowledge about how to manage the business aspects of a hospital including marketing aspects, financial and accounting aspects, operations aspects, and human resources aspects. The marketing aspects explain how managers market their hospital and develop and maintain their relationship with patients and other stakeholders. The financial and accounting aspects explain how managers can finance their hospital and understand the financial performance through financial ratio analysis, while the accounting aspects describe how to prepare financial statements and how to use accounting information. The human resources aspects describe the importance of job design, how to design performance appraisal and compensation systems in a hospital. It also explains how to implement needs assessment and prepare training programs. The operations aspects explain how important it is to understand the transformation process, the aspects of Physical Assets Management, inventory aspects, quality aspects, and the aspects of hospital information system. Hospital managers need knowledge to help them solve their business problems or management problems in the hospital and to leverage hospital performance.

A reflective question

Review the following questions at the organizational level:

1. Identify three problems in hospitals that are related to marketing aspects. How should managers avoid these problems? What is the situation at your hospital concerning the marketing aspects?
2. Describe the accounting cycle and explain how managers in your hospital use accounting information to support their managerial decisions?
3. If the hospitals experience a low profit margin, what should managers do to leverage the profit margin? Do you experience this phenomenon in your hospital?
4. Using the NPV and IRR can give information if the plan to buy medical equipment is feasible or not. Explain the differences between NPV and IRR.

5. Human resources are considered as a very important asset for a hospital. In your hospital, how do managers implement job enrichment and job enlargement?

6. What is the main problem in your hospital related to managing human resources?

7. How do you manage hospital inventory?

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Chapter Seven

Linking hospital to the health care system:
Strategic Management and Leadership

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Overview of module:

Why are some hospitals successful while others struggle just to stay in operation? Why can a leading hospital be dropped unexpectedly from the top list? Is it related to better quality, more efficient production, more competitive approaches, or more adaptive capacity to meet market requirements?

"Change is the only constant". Hospital managers should be aware of it, as the environment of the hospital organization becomes more turbulent, both internally and externally. Competition has become more pervasive, suppliers demand partnership relations rather than transactional relations, the coverage of regulations has been wider (in terms of human rights, environment, safety, etc.), and customers are increasingly choosy. Within the organization, safety, quality of work life, and equity, are the central issues and discussed widely among the hospital's stakeholders. Therefore, understanding change, managing it, and leveraging it has to be done by reliable and insightful hospital managers, who have proper knowledge and skills to run the hospital organization in a very dynamic environment.

Knowing the importance of governance, and having the capacity to design organization structures are crucial in creating and maintaining an accountable and effective hospital organization. Both governance and

structure must be adaptive and align with the organization's resources, as well as the environment in which the hospital is situated. Strategic management is the vehicle for achieving this.

This module provides a description of the governance of the hospital organization, the structure of the organization, and the application of strategic management. Hospital managers should improve the accountability of the hospital through the concept of good hospital governance. Managers must be working in good collaboration with their board and the main goals of the organization must be directed towards the internal and external customers. Since there are a lot of parties involved in the organization, the structure of the organization has to provide a frame which is accommodative to all parties, covers all functions carried out by the organization, and is feasible to execute. The structure of hospital organization follows its function. With this in mind, this module discusses organization design and the variation of structure, to accommodate the functions of the hospital as a service organization.

Strategic management of the hospital organization has been described in order to develop awareness for hospital managers regarding the strategy to create a sustainable hospital organization. Strategy is a measure that has been chosen to translate the mission and the vision of the organization into the operational level. However, the strategy itself must be adaptive and acceptable to the environment in which the organization operates. In a-step-by-step structure, this module describes the application of strategic management in a hospital setting.

Key readings linked to the module

The following issues are further discussed in these recommended reading resources:

- The importance of corporate governance, the benefit and the conditions required to execute good corporate-governance.
- The application of strategic management to sustaining the organization and to make it adaptive to the changing environment.
- Both raise questions around how we manage the hospital. How can we be concerned with the interests of all stakeholders and how can we accommodate them? Do we run the organization with a proper "map" and that lets us know where we are now and where to go?

Reading materials for the module:

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Mulyadi dan Setyawan J. **Sistem perencanaan dan pengendalian manajemen: sistem pelipatganda kinerja perusahaan**. Jakarta, Salemba Empat; 1999.

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Swayne LF, Duncan WJ and Ginter PM. **Strategic Management of Health Care Organizations**. Malden: Blackwell Publishing; 2006.

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Kaen FR. **Blue Print for Corporate Governance: strategy, accountability and the preservation of shareholder value**. USA: Amacom; 2003.

Learning Objectives

After completing this module, you should be able to:

1. define corporate governance and its features
2. identify organization structure and the way it works
3. describe the strategic management concept and its components
4. analyse the importance of leadership in hospital management
5. identify and define the role and function of the hospital within the referral system

Content

1. Corporate governance

The term "governance" has become more popular in business organizations recently. The rights and responsibilities of today's corporation have to be managed in accordance with current demand, as well as present regulation. Governance is a measure to steer the organization toward the interests of its stakeholders, particularly value for customers.

Governance is about who controls corporations and why. It synchronizes the connection between ownership, social responsibility, economic progress, and the role of the market in fostering a stable pluralistic democracy (Kaen, 2003). Each actor in the concept of governance has their own role and responsibilities, which are obviously separated from those belonging to another, and can be clearly differentiated.

In the past, the owner of a corporation became its manager, and sometimes acted as an operator of the corporation. In the United States, governance initially focused on the role and responsibilities of the corporate owner, since the owner often managed the firm personally. In the hospital setting, even currently, the owner of the hospital may be the same person as the manager and even the service operator. Physician-owned hospitals are the best examples that demonstrate this phenomenon. Budget wise, this might be seen to reduce a lot of labor costs, particularly when managers' salaries are sky rocketing! But, with no other sources of ideas to strengthen the owner-manager's capacity in this situation, the effectiveness of their management must be questioned. Each role comes with its own set of responsibilities, even when carried out by the same person: in the owner-manager situation, one person has to take on three kinds of responsibilities.

The modern organization is usually a limited liability organization in which management is clearly separated from the owner and carried out by managers, who are different persons from the owner. It means, furthermore, that the owner is not personally liable for the obligations of the firm to other parties. The consequence is that the owner may loosen

their grip on practical management functions, although they maintain strong power to influence the overall direction of the organization. Once the direction has been set up, then the managers will run and execute it, while the owner may become more distant and removed from the daily business of the organization.

The other party involved in the governance concept is the regulator. In the organizational environment, the regulator is one of the most influential elements. The regulator develops policy, rules and law to control the market. They apply the norms and procedures that will provide better service to the consumers. In effect, there is a reward and punishment mechanism affecting all players within the system, which is controlled by the regulator. Even in controlling the internal relationship between the corporate owner and the manager, the regulator may apply particular rules. The regulator's role is becoming more important in this dynamic and turbulent business environment.

The questions to reflect on regarding the concept of governance are:
- Who do the managers represent and why?
- What is the connection between the manager and the owner? What are the social responsibilities of both, owner and manager?
- How does the manager achieve the necessary trust to accomplish the economic and social objectives that have been entrusted to them?
- Who should control the organization, and how should it be controlled?
- How deeply may the regulator control the organization?

2. Strategic Management

When governance has been set up, then the strategy to execute the organization's policy and objectives becomes the next issue. Governance is, in a sense, the software of the organization and strategy, the way the organizational structure works toward achieving its mission.

Strategic management can be defined as "an ongoing organizational process which aligns the strengths and weaknesses of the organization with opportunities and threats in the environment, in pursuit of the organization's goals and to satisfy prime stakeholders" (Perry, 1992). Currently, the hospital organization operates in a turbulent environment,

which is very dynamic and unpredictable. Hospital managers should be aware that the environment is complex and that special attention is needed to ensure the hospital organization fits well within its milieu. Hospital managers should be able to adapt current best management concepts to run the organization. Sometimes this means abandoning previous management styles completely, even though they may have gained a degree of success.

Hospital managers need a tool to organize the hospital, that is able to navigate the direction and to analyze the future trends of the business. This tool is termed strategic management, and consists of competitive moves and business approaches that will produce successful organizational performance (Swayne et al. 2006).

In order to make strategic management useful for the survival of the hospital organization, managers need particular competence in the approach. Today's hospital managers need to develop their competency to analyze the present business environment and to predict the future of business trends. Both capabilities are now very important as standard competencies for hospital managers. Managers have to do a remapping process, determining the current position of their hospital within their competitive arena. Managers have to pick their best options and strategies after they have determined their current position. Therefore, their own personal competency needs to be renewed regularly in order to lead the organization appropriately, through this dynamic, changing environment. For a successful hospital, this strategic management competence is a prerequisite, established by the hospital before running the business and delivering the service to the community.

More than 97% of the top 100 US companies and 92% of thousands of organizations, have developed strategic management. In the health sector, strategic management has been widely introduced from early 1970's. In Indonesia, however, in a study conducted in 1995, of nearly 325 hospitals, most of them had not developed strategic management. Although a training program has been set up and was conducted in that year, the benefits of having introduced strategic planning have not been immediately observable (Trisnantoro, 2005).

Strategy is a measure that has been chosen by top level managers to translate the vision and mission of organizations into the operational level. Strategy is the pattern or the plan that integrates the organization's major goals, policies, and action sequences into a cohesive package. Strategic management may be translated as a process in which managers and employees interpret the vision of the organization, and create a strategic formulation in order to run the organization and achieve its goals (Quinn, 1998).

Figure 56. Leadership and Strategic Management (Trisnantoro, 2005)

Adapted from Strategic Management Framework (Horak, 1999)
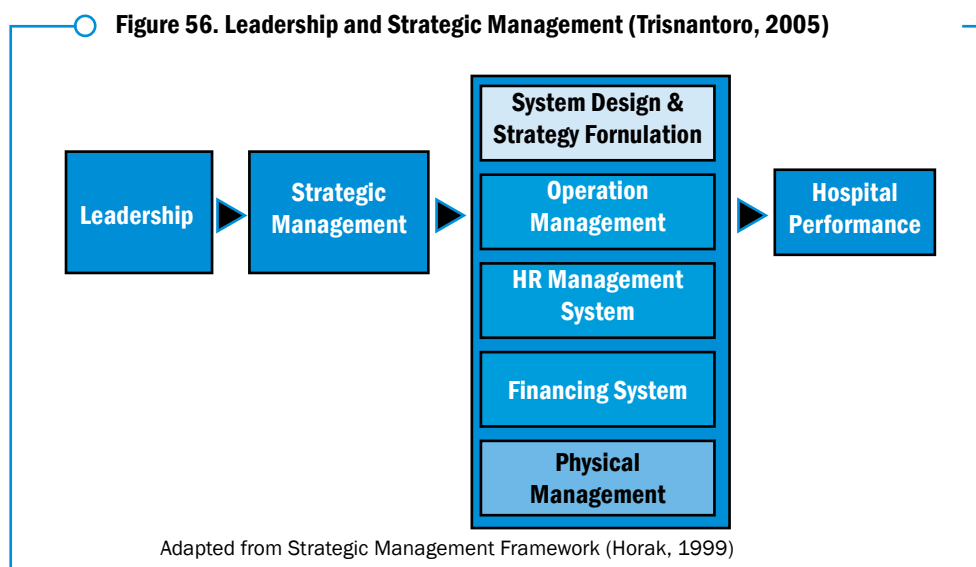
Mintzberg (Quinn, 1998) defines strategy in a different way, using 5Ps as a mnemonic for the elements of strategic management: Plan, Ploy, Pattern, Position, and Perspective. The description of the 5Ps is the following:

■ The 'Plan' is the directing strategy used by the managers to formulate the definitive direction of the organization. Afterwards, the managers correct the current position of the organization to align with the planned direction.

■ The 'Ploy' is a strategy to play the game, to conduct certain manoeuvres, to deflect threats and to beat the opponent.

■ The 'Pattern' is focusing strategy towards particular action. In this strategy, all the resources of the organization would be linked and would be activated within one specific pattern to achieve the goals.

■ The 'Position' is a strategy to locate the organization in the environment and to compare its spot to other organizations.

■ The 'Perspective' is a strategy to merge any kind of perspective within the organization into one shared perspective.

Principles of Strategic Management

Strategic management is very useful to navigate the hospital organization to optimize its opportunities and strengths, as well as to fix its weaknesses and to address its threats, then to formulate the best strategy and to execute it apropriately. The key questions in strategic management are "where are we now?", "where do we want to go?", and "how will we get there?". These three important questions lead to the understanding of strategic management utilization in organization (Mulyadi & Setyawan, 1999).

Figure 57. Strategic Flow Management Model (Adapted from Swayne et al. 2006)

INPUT Contributing Factors	**THROUGHPUT** Proccesses	**OUTPUT** Outcome
RESOURCES • Staffing • Capital Funding • Materials • Facilities • Clinic Design **CAPABILITIES** • Motivation • Leadership • Communication **COMPETENCES** • Training • Skills • Knowledges • Values	**INTERNAL** • Institutional Systems • Management Systems **EXTERNAL** • Regulation Systems • Financing Systems • Collaborative Systems	**PATIENT** • Increased Patient Safety • Increased Patient Satisfaction • Increased patient's health status **ORGANIZATIONS** • Reduced medical errors • Improved quality of care • Increased revenues **COMMUNIY** • Increased sosialresponsibilty • Improvement of health status

The first thing to be done by managers is to define the current position of the organization. The ability of senior managers to define the current reality plays a major role in this first step. All circumstances and situations will be seen as part of that reality, however the perspective of the manager needs to be orderly and maintain objectivity. The information used in the consideration process must be valid and reliable. Comprehensive analysis, conducted by senior management using quantitative as well as qualitative methods, yields an accurate impression of the present status of the organization and its relative position in the environment (Trisnantoro, 2005).

This first step is followed by the definition of directions. It requires the capability to do accurate forecasting and trend-watching. There are numbers of tools and formulas to calculate future trends, however, the vision of senior managers makes a large contribution to the defining of directions and the final destination. The senior manager's ability to clearly describe the ultimate goal through visioning has a strong association with organizational success.

The last step is to formulate the strategy to achieve the ultimate goals. The vision that has been transformed into strategy is the answer to question number 3 ("how do we get there?"). Strategy is the big picture of how the organization may achieve its goals. In another form, tactic is a smaller format of strategy and has shorter time in execution.

Tasks of Strategic Management

Strategic management consists of the measures taken by senior managers to analyze the organization environment, to define the opportunities and threats, to analyze organization strengths and weaknesses, and to define the vision, missions, and the goals of the organization. Based on the mission statement, senior managers define their strategy after analyzing external and internal factors (Trisnantoro, 2005 pp52). Strategy consists of 3 components: strategy formulation, strategy implementation and strategy evaluation.

Figure 58. Strategic Management Concept (Trisnantoro, 2005)
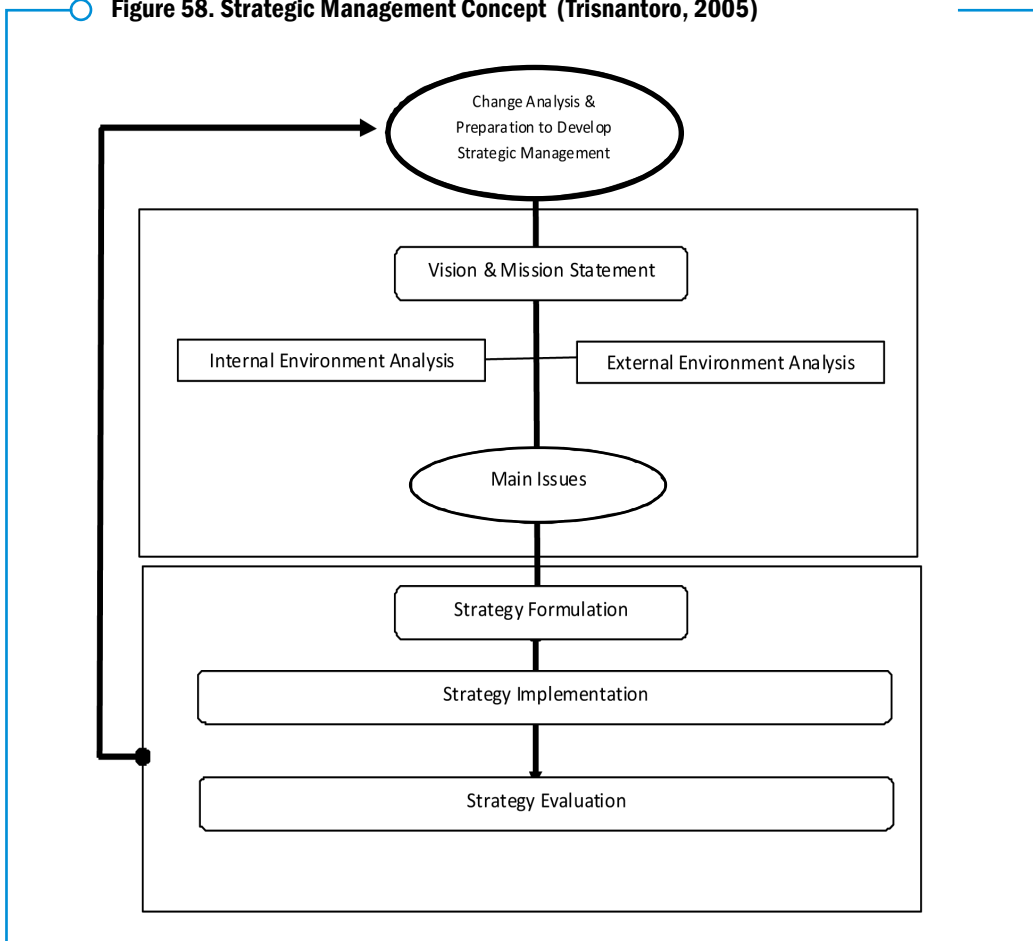
Change analysis is an activity that describes changes in the environment, both internal and external, in preparation for setting up strategic management. Dynamic change within the environment is a trigger for senior managers to think strategically. The sensitivity of senior managers in making changes is a critical factor in this phase. On the internal side, the readiness of the organization to make changes is the most challenging issue. Organizational citizens mostly like to stay in their comfort zones instead of moving towards new frontiers and changing their conventional practice. Senior managers should be able to "buy" their commitment in to support the preparation phase.

Vision and mission statements are prepared after the change analysis and preparation have been completed. Defining the vision and mission of an organization is an important strategic action, the synthesis of

senior managers' interpretations of environmental conditions and the organization's citizens' opinions. Smart interpretation leads to a concrete-though-futuristic vision and mission (Mulyadi & Setyawan, 1999).

Vision development begins with thinking strategically about the organization's future make up, valid for up to 5 to 10 years. It depends on many factors, such as environmental dynamics, senior managers' sensitivity and the competitive atmosphere. Several conditions should frame the vision: it should inject a sense of purpose into organizational activities, provide long term direction, and give strong organizational identity (Swayne et al. 2006).

The mission of the organization reflects management's vision of what the firm seeks to do and become. It provides a clear view of what the organization is trying to accomplish for its stakeholders. It also indicates an intent to stake out a particular position for the organization in its environment. A mission driven organization is an organization which defines clearly its main reason for existing in the universe. Hospitals, for example, exist to provide health services for the community. However, if the hospital no longer delivers its services, it means that, effectively, it no longer exists – it may have a structure, but no real purpose (Trisnantoro, 2005).

Internal and external analysis leads to the formulation of the main issues facing the hospital with the SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) the most popular tool to conduct this analysis.

Numerous external factors may affect the direction and activities of an organization, e.g. global dynamics, national trends, demographic changes, technological advancements, social and cultural changes, and so forth. Small hospitals in remote areas may still be affected by the huge changes at the global level. Although they may be separated and remote from major centres, their supply-chains and procedures, as well as technologies in medical services, are linked to each other through complex networks (Swayne et al. 2006).

Internal factors - human resources, facilities, funding, organization culture, and so on - have a similar effect to external factors on the direction and activities of the organization. The hospital organization is one of the most

sensitive to the alteration of internal factors. Neighboring hospitals, with similar features except the culture, may perform in quite different ways.

The final analysis comes up with the main issues that the organization has to address. The main issues have been synthesized from the vision and mission statements, and the internal and external analyses. The objective of describing these main issues is to determine whether it is feasible to develop the organization. When this analysis is done precisely then the diagnosis will be close to the reality. Finding valid main issues is one of the most difficult assignments in this phase, but needs to be done since it will form the basis from which to create and to formulate strategy (Trisnantoro, 2005).

The relationship of strategy formulation to situational analysis can be described as follows: situational analysis provides information concerning the external and internal environments that is useful to formulate strategies. The strategy selected by the organization should address external opportunities or threats, draw on competitive advantages, keep the organization within the parameters of its mission and values, move the organization toward its vision and make progress toward achieving the organization's ultimate goals.

Strategy formulation is the main vehicle for transforming vision into reality. Strategy formulation is an expression of integrity alongside vision, decision, and commitment, to achieve organization goals by using all relevant resources to "win the competition". Therefore, strategy formulation should be done under certain conditions, using logical methods and schemes, clear parameters of feasibility, and precise indicators (Swayne et al. 2006).

Strategy implementation is the translation of strategy as a concept into strategy as practical activities. In the hospital setting, strategy implementation encompasses the whole set of activities at every level of the organization, including the strategic business unit and supporting unit. All processes in the hospital organization sub-systems are targets of strategy implementation. Therefore, the hospital organization structure plays a big role in directing the strategy into practice and supporting the execution of strategy at the operational level. Whenever senior management fails to detect and to deliver the strategy down to service

level, then the technically operational level is free to play its own game plan. The organization structure bridges communication processes within the organization system. The linkage between the top levels of an organization to the service level can be seriously broken down if the structure does not follow function appropriately. On the other side, top level support to provide proper facilities and equipment, creating an organization culture and developing team work, may strengthen the execution of strategy. The intention during this phase is to prove that all planned strategies can be executed and gain the expected results (Quinn, 1998; Trisnantoro, 2005).

Strategy evaluation defines whether strategy implementation has achieved its goals. There are three levels that can be used as an indicators, they are: goals achieved, goals partially achieved, and goals totally failed to achieve. Senior managers, as those who are responsible to develop the strategies, should define the results, the impact, and the response of stakeholders regarding strategy implementation. In this phase, indicators that have been set up previously become very important as a parameter to rate the achievement (Trisnantoro, 2005).

Correction is one of the important activities needed to be done after the strategy evaluation process. When a strategy fails to achieve a particular goal, then evaluation should find the cause. The impairment may have occurred in developing the vision and mission statement, or in the selecting of main issues or in the strategy formulation phase (Swayne et al. 2006). Therefore, strategy evaluation may suggest remediation at the operational level as well as at the strategic level (top organization level).

3.   Organization Structure

The Importance of Organization Structure

Organization structure must facilitate rather than obstruct the implementation of selected strategies within the organization system. Senior managers have to be able to match organization structures to the strategy, since it is a fundamental task of their position (Swayne et al. 2006).

Whenever the directions, market, competitors, and service organization have been defined, senior managers should determine which organizational structure will be the most appropriate 'fit' to facilitate the strategy. This strategic thinking activity matches the requirements of the strategy with the advantages and disadvantages of various structure options (Stanford, 2005).

There is a possibility to change the current organization structure when it no longer matches and may limit the implementation of the latest strategy that has been selected. Therefore, the main task of senior managers is to define the organizational design. It is the process by which senior managers select and manage the various dimensions and components of the organizational structure and culture so that an organization can achieve its goals. Then senior managers have to describe the organizational structure: the formal system of task and reporting relationships that controls, coordinates, and motivates employees, so that they cooperate together to achieve an organization's goals (Trisnantoro, 2005).

The Building Blocks: *Grouping Organizational Activities*

Differentiation is the grouping of people and tasks into functions and divisions to produce goods and services. This step divides people, task and responsibility according to a particular level and particular division. Organizational citizens can be considered as an integrated team, however, they each have specific tasks, responsibilities and authority, which separates them into different groups. Differentiation is the measure used to put this individual diversity into the single system called the organization (Swayne et al. 2006; Stanford, 2005).

A function is a set of people who work together and perform the same types of tasks or hold similar positions in an organization. A single function may consist of more than one person, depending on the scale of functions they have to accomplish. As organizations grow and their division of labor into various functions increases, they typically differentiate further into divisions. As the hospital started to produce different kinds of services, it created separate service divisions, each of which had its own skilled staff, quality standard, and service delivery functions. A division is a group of functions created to allow an organization to produce and dispose

of its goods and services to customers. In developing an organizational structure, senior managers must decide how to differentiate and group an organization's activities by function and create divisions in a way that achieves organizational goals effectively (Stanford, 2005; Swayne et al. 2006).

Functional Structure

This type of structure groups people together based on similar positions, performing a similar set of tasks, or using similar kind of skills. This division of labor and specialization allows an organization to become relatively more effective. Functional structures organize activities around the mission-critical activities or processes of the organization, and are the most prevalent structure for a single service. In hospitals, functional structures might include departments, such as clinical operations, marketing, finance, information system, and so forth.

The functional structure builds a high degree of specialization and expertise within functions or processes and can foster efficiency, particularly when tasks are routine and repetitive (e.g. service in clinics). Control of strategic decisions is centralized, however, and it may become an obstacle in a particular situation.

The advantages of a functional structure can be seen in the coordination process. It provides easy communication among specialists, since people grouped together according to similarities (specialization) in their positions can easily communicate and share information with each other. It supports quick decisions. People who approach problems from the same perspective can often make decisions more quickly and effectively, compared to those who do it in various ways. It helps learning within the sub division at the same level of function. Functional based structures make it easier for people to learn from one another's experiences. Thus a functional structure helps employees improve their skills and abilities and this can enhance individual and organizational performance.

A functional structure also provides advantages for motivation. It facilitates performance evaluation for supervisors who are in a favorable position to monitor individual performance, reward high performance, and discourage

social loafing. Functional supervisors might monitor easily because they usually possess high levels of skill in their particular function. This facilitates performance evaluation for peers by allowing group members to monitor and control one another's behavior and performance levels. It creates teamwork and also leads to the development of norms, values, and group cohesiveness that promote high performance. Functional structures create a career ladder - functional managers and supervisors are typically workers who have been promoted because of their superiority in competence, experience and performance.

However, there are a number of disadvantages in a functional structure. It has to serve the needs of all products, and when the range of services that a hospital produces increases, the various functions can have difficulties in efficiently serving the needs of the wider range of products. It also needs strong coordination. As organizations attract customers with different needs by providing various services, they may find it hard to serve these different needs by using a single set of functions. The more complex offerings need more functions and as a result more coordination activities (Stanford, 2005; Swayne et al. 2006).

Figure 59. Functional Structure Combined with Process Structure (Adapted from Swayne et al.2006)
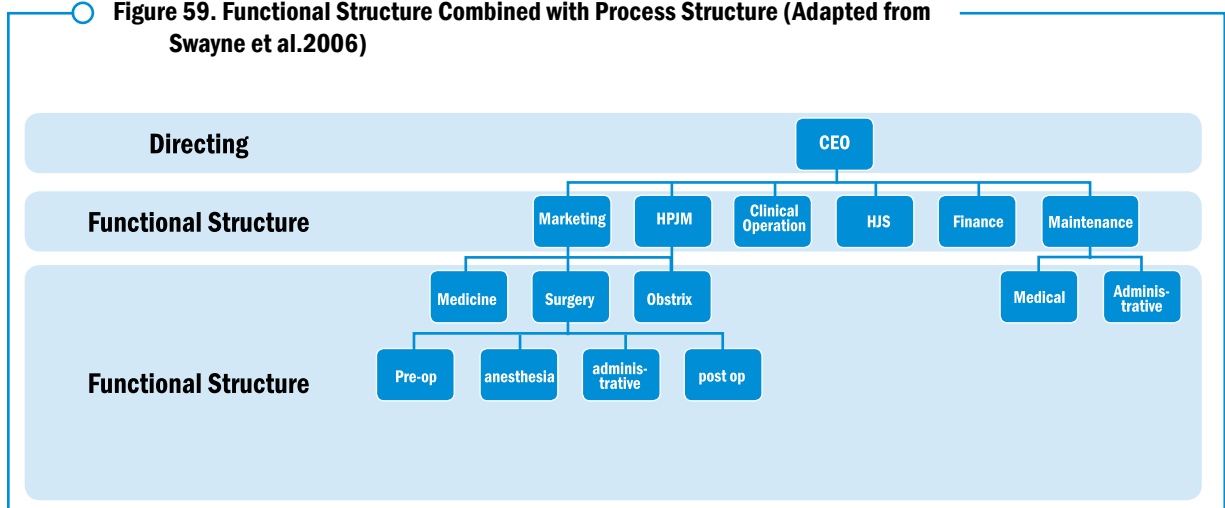
Divisional Structure

A divisional structure that overlays functional groupings allows an organization to coordinate intergroup relationships more effectively than does a functional structure. This kind of structure is common in

organizations that have grown through diversification, vertical integration and aggressive market development. When organization grows and develops more diverse services, divisional structures are used to divide the organization into more manageable and focused parts. This results in several smaller, more focused semi-autonomous strategic business units within the organization (SBU).

The divisional structure provides greater coordination advantages, and focuses on quality products and customer services. Functions are able to focus on all the activities for a specific kind of service to a specific customer. Its narrow focus helps a division to provide high-quality products and serve high-quality customer services. It facilitates communication, since in-between functions may improve decision making, problem solving, and agreement. A divisional structure might also facilitate the creation of customized management and problem solving. The structure puts managers closer to the scene of operations and enables them to take action as fast as they need to. It also facilitates teamwork, since people are sometimes able to pool their skills and knowledge and brainstorm new ideas for products or improved customer services.

The divisional structure provides several advantages for motivation. It creates clear connections between performance and reward. A divisional structure makes it easier for organizations to evaluate and reward the performance of individual divisions. It is relatively easy as well to assign rewards in a way that is closely linked to their performance. Organizations apply a divisional structure that might be easy to identification within the division. Employees' close identification to their own division is able to increase their commitment, loyalty, and job satisfaction, since they are well supervised and rewarded.

However, there are numerous disadvantages of a divisional structure. It creates a high operating and managing organization cost. Since each division has its own set of functions, operating costs increase. The number of inputs in an organization, for example, the number of medical doctors, nurses and ward managers, increases, because each division has its own set of service functions. It might add to poor communication between divisions. Divisional structures normally have more managers and more levels of management than functional structures do, and communication

problems can arise as various managers at various levels in various divisions attempt to coordinate their activities. This might drive conflict within the organization as well (Stanford, 2005; Swayne et al. 2006).

Figure 60. Divisional Structure – Product with Geographic Divisions (adapted from Swayne et al.2006)
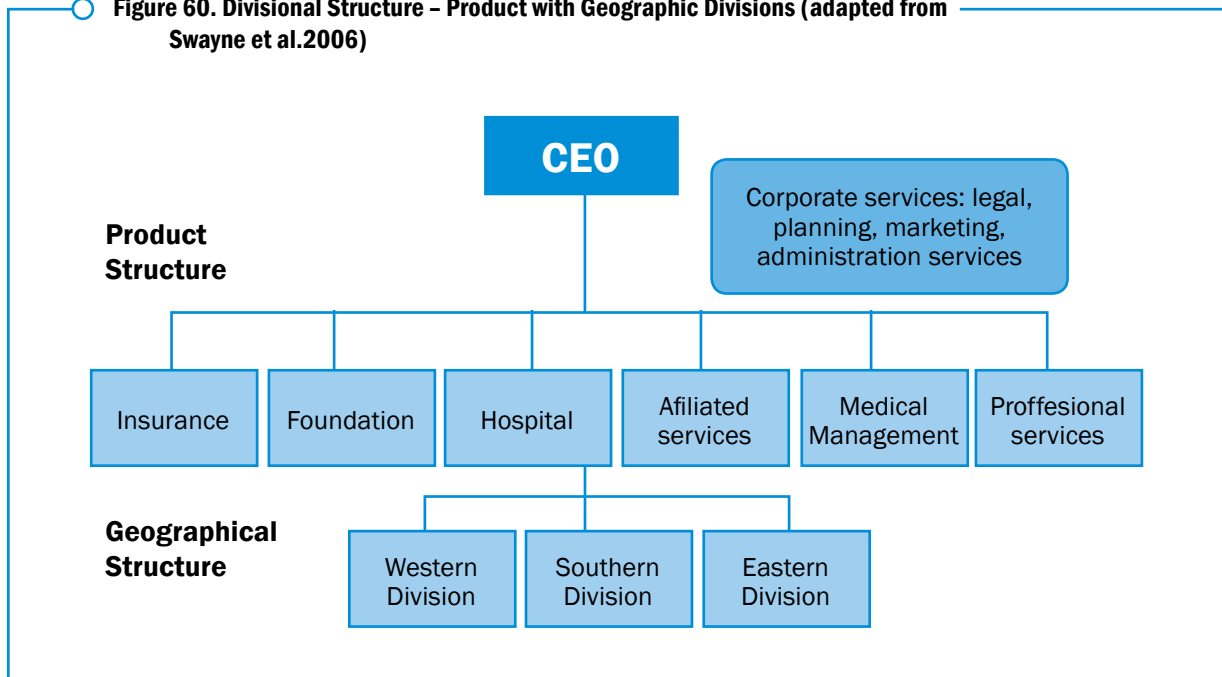
Matrix Organization

The matrix organization is a complex form of differentiation that some organizations use to control their activity results in the matrix structure, which simultaneously groups people in two ways, by the function and by the product they are currently working. In practice, the employees who are members of the product teams in a matrix structure have two bosses - a functional boss and a product boss. The advantage is that the matrix structure provides a work setting in which such employees are given the freedom and autonomy to take responsibility for their work activities.

The matrix organization might be the most appropriate structure to adapt if organizations have numerous products or projects that are to be delivered, with common functional expertise. The basic principle is to organize around problems to be solved rather than functions, products or geography. It develops expertise and allows product areas or projects to use that expertise as needed.

However, the matrix structure is difficult to manage because of its complexity and cross-functional architecture. This type of structure requires a great deal of coordination and communication and some degree of negotiation and shared responsibility between project managers and functional managers. Two bosses making conflicting demands on a two-boss employee cause role conflict. Reporting relationships in the matrix make employees vulnerable to role ambiguity. It may promote role conflict and role ambiguity. The complexity tends to create high levels of work stress, since conflict and ambiguity can increase feelings of stress. This structure provides limited opportunities for promotion because most movement is lateral, from team to team, not vertical to upper management positions (Stanford, 2005; Swayne et al. 2005).

Figure 61. Matrix Structure (Adapted from Swayne, 2005)
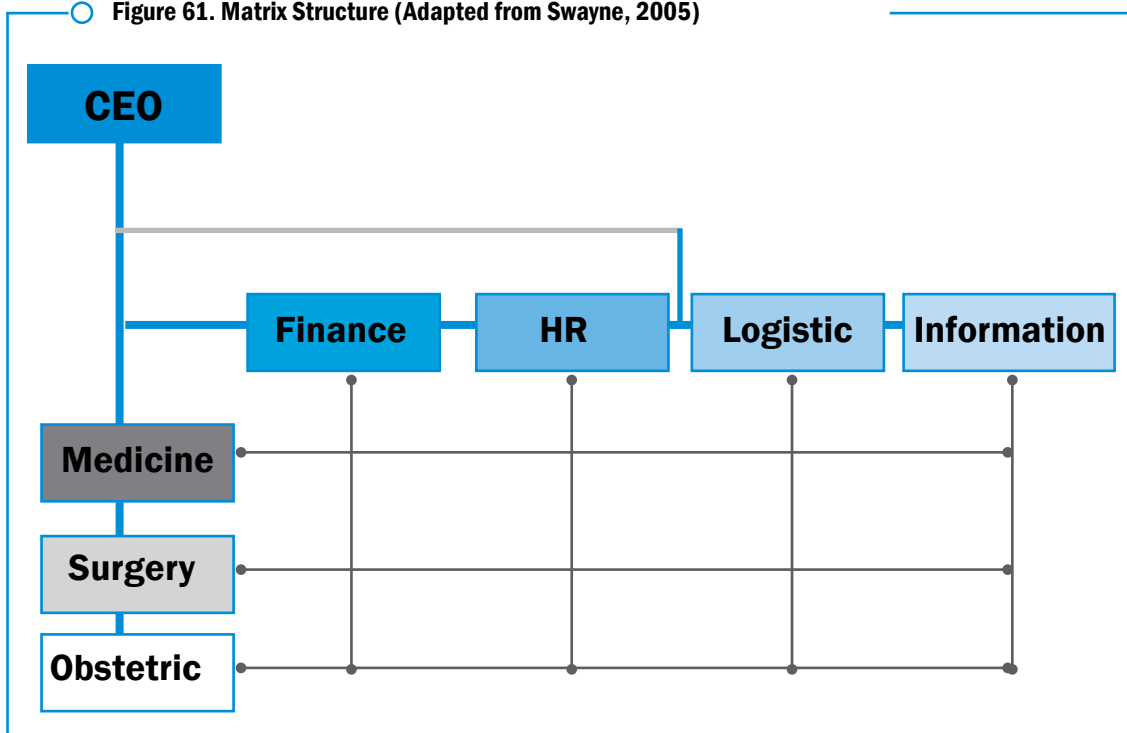
Culture as a Spirit of Hospital Organization

Culture permeates the organization. Strategy, execution and structure are very important factors in the organization success; however, culture is the binder to them all. The alignment between the technical aspects and soft structures of the organization can be achieved through culture (Swayne et

al. 2006). Culture might remain when strategy has been changed, with the persisting organization culture supportive of the new strategic effort. But changing the culture will affect the strategy and organizational activities.

Culture characterizes the hospital's way of delivering services, the values that most members of the organization share, and the things that must be learned by new members. Culture is the collective customary way of doing things that paints the organization in a specific pattern. The way a culture is designed or evolves over time, affects the way people and groups behave within the organization. Once an organization decides how it wants its members to behave, what attitudes it wants to encourage, and what it wants its members to accomplish, it can then design its structure and encourage the development of the cultural values and norms to obtain these desired attitudes, behaviors, and goals (Mulyadi & Setyawan, 1999).

Organizational culture is defined as the implicit, invisible, intrinsic, and informal consciousness of the organization that guides the behavior of the individual and shapes it self out of their behaviour (Swayne et al. 2005). It may be thought of as shared assumptions, shared values and behavioural norms. The basic principle behind this thought is that culture is learned and shared, and that culture is both subjective and objective.

Organizational culture is learned and shared

The culture of the hospital is made meaningful by long experience and created by its previous and current citizens. Culture influences all aspects of every activity within the hospital organization, including the decision of what is relevant or irrelevant, what is important of unimportant. The Mayo Clinic, as a classic story of organizational culture, has been developing its culture on three primary values: pursuit of service rather than profit, concern for the care and welfare of individual patients, and interest by each member of the staff in the progress of every other member. Anyone in the Mayo Clinic has to deal with these three values and tries their best to learn and to adapt to them. However, the most important issue is that success can be achieved depending on how well these values can be adopted and implemented in daily activities. Once the citizens, even the new ones, understand this condition, then they will be highly motivated to learn and to apply these values. When it is done on a large scale, affecting

all citizens continuously, it becomes the culture of an organization (Swayne et al. 2006).

A shared understanding is important because it helps the citizens to reflect on how things are to be done. If all citizens know that the culture of an organization dictates particular values (e.g. the patient is all important), decisions can be made according to this understood value system, even when a specific policy, procedure, or rule is not available in particular situation. Citizens will not become robotic workers who work under a linear order; they will be empowered by this shared culture to work based on the values they have fully understood.

The Link Between Culture and Strategy

Strategy formulation process must take the culture into account, with selected strategies considering how aspects of the organizationial culture may enhance the strategy's effectiveness. Senior managers have to be able to analyze the current organizational culture and its impact on the selected strategy. Therefore, they must assess what assumptions, values, and behavioral norms are necessary to most effectively carry out the strategy (Trisnantoro, 2005).

Figure 62. Internal Analysis and Culture (Adapted from Trisnantoro, 2005)

Organizational Culture

General Management

| Marketing | Finance | Clinical Services | Logistic |

Sub System
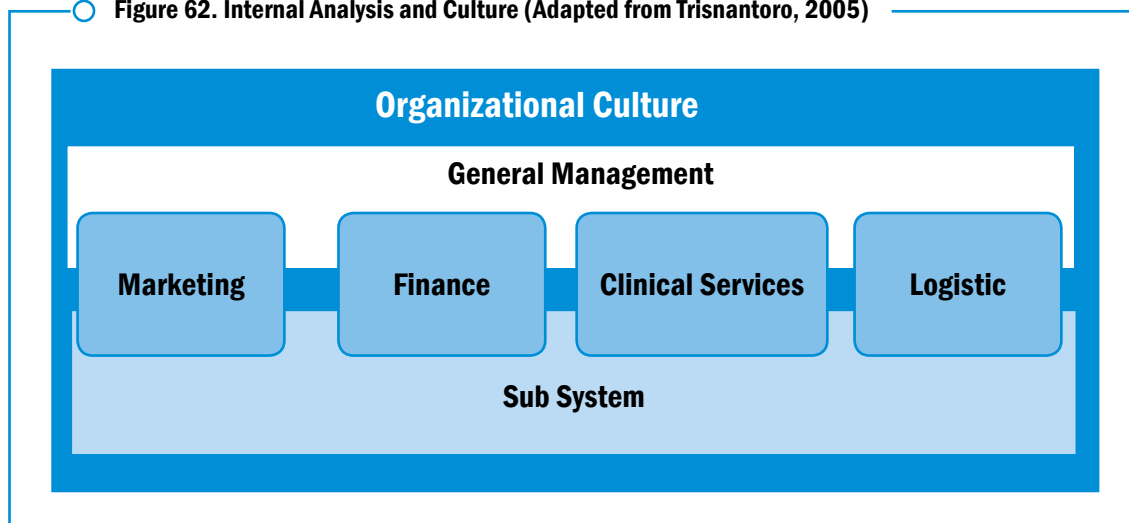
During the situational analysis of the strategic management process, senior managers have to assess whether these directional strategies are still appropriate, and are actually reflected in the culture of the organization.

The result of this assessment will determine whether senior managers need to create an implementation strategy to maintain or to change the organizational culture.

In internal analysis, senior managers should count culture as an object of assessment. In addition to comparing the requirements of the overall strategy to current culture, the results of the internal evaluation may suggest particular actions. The internal analysis might determine whether the current organizational culture is a strength or weakness and whether it might create opportunities or threats.

The red line division between culture and strategy should be intact and clearly understood. Hospitals with profit oriented values might not deliver their service well when their culture is not-for-profit. The strategy of profit-oriented hospitals is completely different as compared to not-for-profit hospitals.

4.   Business ethic

Ethics is one aspect that we need to consider when establishing an organization or developing organizations strategies. This also applies to hospitals. Like many other hospitals in many countries, hospitals in Indonesia have tended to move towards a management system based on a business concept that leads to market mechanisms and efficiency. The question is whether these changes will prove harmful or damaging to others. There are worries about the negative effect of hospitals shifting to become profit/business organizations. Therefore, hospitals need to be aware of the ethical issues involved, and understand the Pareto Utility Model that can be used to prepare hospitals as a business entity with a social function. Moreover, hospitals strategies need to be continually analyzed t see whether they are ethical or not.

In discussing the relation between hospital ethics and professional ethics, Jacobalis (1993 cited in Trisnantoro 2005, p.348) distinguishes two types: individual ethics and institutional ethics. Individual ethics are professional ethics such as physician ethics, nursing ethics etc. that control the behavior of individual and professional groups. Meanwhile, hospital ethics form one institutional ethic in health services, which can be further categorized into bioethics and management ethics.

The understanding of hospital ethics is experiencing major changes. Previously, hospital ethics were based on the relationship between physicians and patients, in the context of the Hippocratic Oath. However, today hospital ethics mainly discuss the norms that may be applied by the hospital management. These norms reflect how the hospital is going to operate and how, in the end, the hospital can gain trust from the community.

Hospital ethics in Indonesia are determined by the Etika Rumah Sakit Indonesia (ERSI), formulated and managed by PERSI (Perhimpunan Rumah Sakit Indonesia). Weber (2001 cited in Trisnantoro, p.353) said that to comply with ethics, health service organizations have to consider three perspectives: 1) as a health service provider, 2) as an employer, 3) as a citizen, which are the aspects that distinguish health organizations from common organizations. Moreover, some of the hospital business ethics are related to economic principals such as costs, quality services, incentives, compensation and externality. These economic principles can be used as guidance in developing a hospital strategy, dealing with issues such as:

1. The hospital as a service provider that offers many products
2. Incentive strategies for physicians
3. Hospital strategy and principles as a workplace
4. The hospital as a citizen

Beside its role as guidance for developing hospital strategies, ethics are also important to be developed as a discipline that is important for medical students, and health professionals.

Conceptually, business ethics will be needed by hospital managers for managing the hospital. Moreover, business ethics in the hospital can support a good corporate governance program, both for profit and non-profit hospitals. Besides, together with physicians' ethics, hopefully business ethics can support the development and improvement of good clinical governance in hospital medical services. Moreover, business ethics in health services is mainly based on normative analysis in economics and will provide guidance for professionals in the health service system to collaborate better and more ethically.

5. Principles of managerial economics and its application in hospital management

Today, the development of hospitals is going through significant transformations. Hospitals are facing a global and competitive environment. Factors such as rapid technological change in innovation in products and processes, as well as in marketing and sales techniques, also contributes to the increasing complexity of the business environment. In addition, both input and product prices are more volatile due to the increased globalization of the marketplace. This dynamic economic and business environment makes it ever more difficult to precisely evaluate the outcome of a business decision. Therefore, reliable economic analysis becomes all the more important as a basis of decision making in facing the changing environment (Sahu 2007). The changes that are continuously happening in the economic and business environment have forced hospitals to manage themselves using ethical management concepts. Without a clear management concept, it will be difficult to develop hospitals in Indonesia (Trisnantoro 2005, p.1).

Financial problems in Indonesia have lessened the government's ability to finance national development. While the government is far from being a welfare state, hospitals in Indonesia are being led to adopt private goods principles in order to manage the service system. Consequently, hospital services are developing into an industry that is based on economic principles with one specific characteristic: competition (Otter, 1991 cited in Trisnantoro, 2005, p.51).

One important concept that can be used globally to improve service quality is hospital autonomy. In many countries, the concept of hospital autonomy is a part of public services reformation with the intention of responding to the community demand for quality improvement in public services. It offers an opportunity to reduce corruption, promote human resource development, and increase accountability and transparency in planning and budgeting processes. Another output that is expected from autonomy is that the public will be more reliant on government organizations that provide hospital services (Trisnantoro, 2005, p52).

Chawla et al. (1996 cited in Trisnantoro, 2005, p.52) states that the definition of hospital autonomy can be seen from two dimensions: 1)

The degree of centralization in decision making; 2) the scope of decision authority to determine policy and program implementation by the hospital. The concept of autonomy can be used both in public and private hospitals. For the private hospital it relates to how far the hospital director can make management decisions, such as determining the hospital budget. In public hospitals, we can measure the degree of autonomy, for instance from the indicator of physician recruitment. If the public hospital doesn't have the authority to accept a physician, then it means that the hospital doesn't have human resources autonomy. However, we need to understand that although the hospital receives high levels of autonomy, this is not the same as a shift to privatization, as long as there is no change in ownership from the public. Swadana policy in Indonesia gave limited - not full autonomy - in its financial aspects. In addition to the limited autonomy, there is also full autonomy, which is called corporatization, and public hospital privatization (Trisnantoro 2005, p.55).

In Indonesia, the development of hospital autonomy has been done with the Swadana policy. This policy is only a small part of many aspects of hospital autonomy. The Swadana policy only applies to the use of hospital functional revenues. Meanwhile, for other aspects, such as purchase of hospital equipment and specialist recruitment, these are still being done by the central government. As stated before, hospitals in Indonesia don't get enough health funds from the government. And as we know, hospitals are also going through a change that is shifting from a humanity system to a business organization with social function/mission. Therefore, they have to develop their ability to get/raise fund based on economic principles, and still carrying on their social function. For that reason, hospital managers have to be able to apply business principals and understand economics, especially micro-economics in the health sector, as well as understanding managerial economics (Trisnantoro 2005).

Economics is a discipline that is used a lot by other disciplines. According to George Bernard Shaw "Economy is the art of making the most out of life" - according to the general definitions, economics discusses how to allocate resources in several alternatives of usage in order to satisfy human needs (Katz and Rosen 1998 cited in Trisnantoro 2005). Basically, the application of economics to the hospital can be learned though several models that are based on tariff systems (Trisnantoro 2005, p.68):

1. Circular Flow Model (Katz and Rosen 1998)
2. Demand and supply model

The circular flow model states that economic activities are circular (see the picture below), the production, income, and services of scarce resources continuously move/flow between producers and consumers. The picture shows the flows of services and goods, and also inputs within production systems. The firms give services or goods to the needed household. Meanwhile, the household give inputs that are needed for business. The outer circle shows the flow of the money. Households spent their money for goods and services which is revenue for the firm. These resources will flow back to the household as paying means for their works. This principle makes the economic system keep flowing. In short, the Factors of Production (land, labor, capital and entrepreneurship) flow from households (consumers) to producers (businesses). Goods and services flow from producers to consumers and, in exchange, money flows in the opposite direction (Circular Flow Model).

Figure 63. Circular Flow Model (Trisnantoro 2005, p.69)
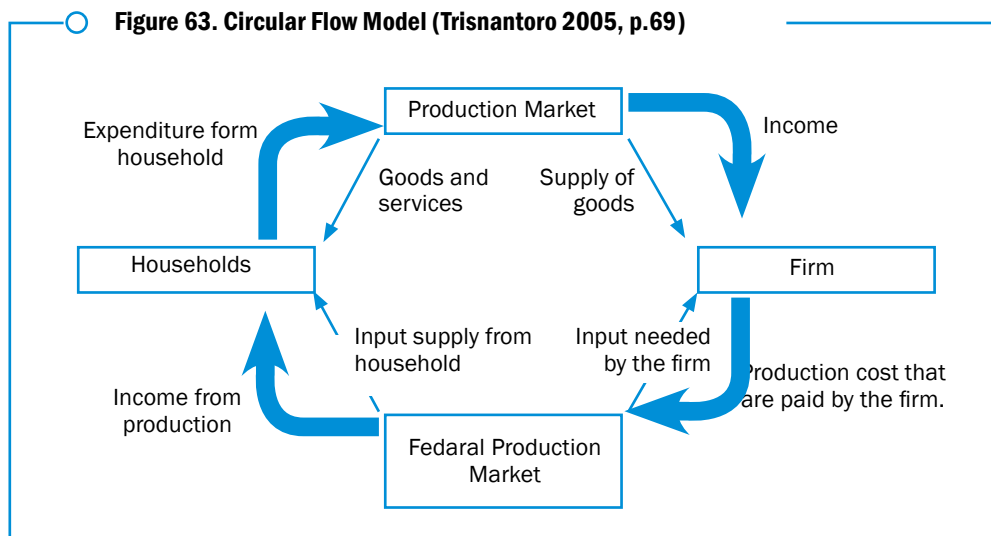
Based on the circular flow model, the hospital can be viewed as a business that provides health services in the production market. Therefore, the hospital has an income that comes from households' expenditure. As a factor of the production market, the hospital needs inputs, for example labor, from the community. The hospital has production costs, such as labour, and as a result, part of the payment for this labour will flow into households. This model can be applied to explain management and

health policy problems in Indonesia. However, this model does not take into account the fact that the government is involved in funding public hospitals in Indonesia. Therefore, in this sector, the government should be taken into account. However, to understand the application of economics in the health sector, we have to understand this model/concept.

Supply and Demand Model. This model can explain the dynamic relationship between households and the firm, that is termed the "Market". A market is persons or groups that are related to one another in selling and buying. For example, there are VIP rooms/ward markets with hospitals providing this specific service for selected patients who are willing to pay for the privilege. This market exists where there are hospitals that provide VIP rooms (as a seller) and there are patients who are willing to use those VIP rooms (as a buyer), and in this market, the production factors are physicians, nurses or drugs/medicine.

In a market, the terms "supply and demand" are often used. The law of supply and demand estimates that price level will move toward the point where the quantity supplied equals the demand (Supply and Demand 2007). The demand for a product is the amount that buyers are willing to purchase. The law of demand states that when the price of a product is increased, with no change in factors other than price (ceteris paribus or "all things being the same"), fewer products will be taken. However, in a hospital environment where change is continuous, this ceteris paribus condition is not likely to happen. Moreover, in the healthcare sector, we need to differentiate between demand for health and demand for health care. In order to understand demand, we also need to understand wants and needs because there are differences between demand in healthcare services and demand for other services and goods (Trisnantoro 2005, pp.110-117).

Managerial economics is the application or implementation of micro-economics in business (Arsyad 1993, cited in Trisnantoro 2005, p.98). Managerial economics points out that there are risks in decision making; however risk reduction can be learned. According to Pappas and Hirschey (1993 cited in Trisnantoro 2006, p.98) managerial economics use applied theory and methods of economics in decision-making in the business and management world. Specifically, managerial economics uses

economic analysis tools and techniques to analyze and solve managerial problems. The success or failure of a business depends on the decisions made by managers, so by understanding managerial economics, it is expected that hospital managers will be able to make better decisions. Managerial economics is designed to give a solid foundation of economic understanding so that business managers can make well-informed and well-analyzed managerial decisions (Sahu 2007), such as setting the tariff and product, decisions whether to make or buy, deciding the most efficient production techniques, decisions around inventory, recruitment, and human resources development, and even investment and financing. Moreover, purely social hospitals with "unlimited" sources of funding will not use managerial economics as much as social-economic hospitals. In a social-economic hospital there are many problems that need managerial economics, such as deciding the VIP room tariff, raising the medical services for physicians etc.

The prospects for applied economics and managerial economics in hospital management in Indonesia will continue to grow. Hospital managers are expected to realize that their management decision always needs analysis from the economic point of view. Using economic tools and concepts, including managerial economics, will optimize the decisions that are made. Moreover, economics and managerial economics concepts are not limited to for-profit health organizations, but it also can be applied by hospitals, Puskesmas (health centers), and even province health offices.

Health financing

In practical terms, the hospital functions as a health service provider and gets their income from selling their services. However, the hospital still has a social function/mission to provide healthcare services to the poor. This social aspect needed to be financed by reliable source of fund. Therefore, hospitals need subsidy. The cross subsidy concept from wealthy patients to the poor ones is hard to carry out. In most countries, hospitals gain subsidy from their government and the community. How about Indonesia?

For that reason it is important to understand the hospital's sources of funds. In general, there are two sources of funds for the social aspect: from the government and from the community. Hospitals in Indonesia need to

understand the sources of funds that come from the central government. Most of these funds are allocated to public hospitals, but there is a tendency to allocate these funds also to private hospitals, especially for poor patient subsidies. There are two sources of government funds: 1) funds that are directly given to the hospitals from the central government and used in provinces or districts and 2) funds that are given to the regional government as APBD. Those funds can be categorized as:

-   Dana Sektoral Departement Kesehatan (Dana Dekonsentrasi Kesehatan)
-   Dana Program KOmpensasi Pengurangan Subsidi Bahan Bakar Minyak Bidang Kesehatan
-   Anggaran BIaya Tambahan (Additional Cost Budget)
-   Dana Alokasi Umum (General Allocation Grant)
-   Dana Alokasi Khusus Non Reboisasi Bidang Kesehatan (Special Allocation Fund for health sector non-reboisasi)

Besides that, the regional government may finance hospitals in their region. There are two important factors that influence health sectors: the economic power of regional government and the community economic power. With these two variables, there are 4 possible situations that can happen in a region:

1. Both government and community have strong economic power
2. The regional government has weak/low economic power, while the community has strong economic power.
3. The regional government has strong economic power, while the community has weak/low economic power
4. Both government and community have weak economic power

The funding situation needs to be identified by each hospital, so that they can develop appropriate strategies to raise funds, taking into consideration issues such as the allocation techniques that are used by the central government, the criteria for the budget allocation, the current political point of view of the health sector, etc.

Another source of funds that can be considered is humanitarian funds from the community. A study of financing in religious and humanity/social/charity hospitals for poor families by Aji and Trisnantoro (2000), cited in Trisnantoro 2005, p.273) identified several mechanisms for funds sources:

1. Cross subsidy
2. Cash Management
3. Charity from Physicians
4. Charity/donation (humanitarian funds) from individuals.

Moreover, the hospital needs to observe and understand how the mechanisms and sources of fund in their regions operate. For hospital directors who like to experiment, they may wish to follow these steps in raising funds (Trisnantoro 2005, pp.283-284):

1. Form a small team to raise humanity funds
2. Identify potential donors
3. Include the humanity raising funds program in the hospital strategic planning
4. Allocate budget for this program: maximal funding is 10% - 15% of revenues that are estimated to be received
5. Hold several activities for humanity fund raising in short and long term.

Although in the end the hospital will not get lots of fund, raising fund activities still need to be done to earn more money. Besides, these activities can be tools to publicize that the hospital is still aware and care of the poor. Moreover, it can be a tool to state that the hospital still needs donation, and is not a place to ask for a donation.

6.   Leadership in Hospital Management

Leadership is the ability of a leader to recognize the time and requirements needed to make change, to identify change directions, to communicate the change strategy to people who are in the organization - especially those supporting the change - and to empower them to make a change and to facilitate the process of attaining the target of change (Podsakoff et al. 1990). Sir Kenneth Calman (England Chief of Medical Officer, 1991-1998) states it in simple terms: "Leadership requires knowing where you want to go, taking people with you, and giving sufficient time and energy to make it happen" (Calman, 1998).

Role of leaders

Through understanding of the concept, it becomes clear why leadership becomes the main pillar in hospital management. After describing the technical aspects of hospital management, leadership gives the power to direct the vision toward a better future, and functions as a spirit to execute the policies and systems. The constant change of situations in the hospital industry requires leaders to comprehend change management, ensure they set a clear direction and are able to manage every changing process. When the hospital is in a turbulent environment, it needs a leader who would keep direction and motivate all staff to stay focused in operation. The leaders must possess leadership skills and the character required to handle such situations, not simply be formal leaders on the basis of their position. Leaders as resource managers should be aware that the hospital industry attracts various parties to become the main agents of change and play major roles. The leader must arrange all resource allocation and open up possibilities for all agents evenly. Simply, on that account a leader needs to strengthen the position of each resource.

The main commitment of leadership in the hospital organization is to give a clear picture regarding the direction and target of the hospital management. They also need to offer clarity in their management, making decisions rapidly, precisely and accurately. In the context of the hospital, therefore, the leader should demonstrate their ability to create the right vision and direct actions toward achieving this vision.

Effective Leadership

The major variables in leadership are vision and commitment building (Steers, 1996). These variables do not change in either normal situations or in the hospital context. The vision of a leader in managing hospital organizations will be communicated to all stakeholders, building commitment among these various parties to jointly realize it.

The clear vision and objectives of the leader would provide the direction desired by their followers. Experiences from the field show that failure of hospitals to gain their optimal achievement is often caused by the unclear vision of the leader. The mobilization of the resources and the managing

processes stagnates, as none of the followers believe in what they were going to do. Discussing vision without addressing strategy and activity is possibly a dream. However, addressing the activity and strategy without considering the vision is also just wasting energy, with no knowledge of where the direction will lead to.

A vision represents the aspiration and ideals of a leader. To a leader, owning a vision is a compulsion. Seeing far forwards and believing that their view will bring the positive change for the world, represents some special attributes often recognized in a leader. Besides vision, another important variable is the ability to build commitment. To "buy in" the commitment of all staff within the hospital organization is a major requisite to be an effective leader. For the vision of a leader to be realized, it must be adopted by their followers. The first step taken by a leader is to communicate the vision to all followers. The purpose is to build the commitment of all followers, so that the followers are willing to provide the time and involve themselves in the effort of realizing the vision. The effort to build the commitment can be done through transformational, transactional and also non-transactional approaches (laissez-faire). The approaches have the same effectiveness in different situations (Rubin et al. 2005). Becoming a role-model, making promises and also using power are the practical forms of the three approaches.

For example, while public hospitals have had difficulties utilizing their own staff, since their directions were unclear, even in regard to purpose and benefit, particular private hospitals have been able to mobilize public civil servant medical doctors to provide better services, since they can apply transactional leadership promptly and in a good manner.

Effective leadership (Avolio, 1999, in Rubin et al. 2005) claims the existence of the ability to develop vision, which provides added value to the environment, and also is effective in building followers. The indicator of effectiveness for the leader is the ability to create and operate the vision through mobilization of followers.

Modern-leadership suggests that leadership effectiveness is achieved through carefully choosing people (followers), considering their suggestions in creating a vision that is trusted, with policy and strategy designed to reach this, and leadership styles that are responsive to the circumstances

(Calman, 1998). This concept of contextual leadership is very relevant to managing hospitals. Especially in the hospital management process, the style of leadership and its application is the most important thing to achieve and to apply. Leaders are more effective when they know what style needs to be taken in a certain situation and when to apply it.

Quality of Leadership

To be recognized as a leader, the would-be leader has to meet many criteria. There are basic criteria to be agreed on in defining the features of a leader in a hospital (Pencheon & Koh, 2000). These are:

1. Having a systematic and clear vision regarding the future of the service and organization
2. Owning plenty of spirit and energy to carry out leadership processes
3. Owning self confidence and ability to trust others in the effort of:

    a. communicating the vision to people in the organization

    b. making the people in organization self- confident and willing to realize the vision

    c. empowering the people for operating the vision through logical and applicative strategy.

Those criteria represent the empirical criteria found in some leaders in health care services. However, the way of forming leadership is more contentious, with three broad schools of thought put forward:

1. Leadership is a magical strength, for some people are truly born to become a leader
2. Leadership is a skill which can be learned and applied
3. Leadership is a set of skills which can be trained through several analysis phases. The effectiveness of these skills is not solely determined by the quality of the leadership but also by the time accuracy of its usage and approach in an organization.

The belief that a leadership is a magical strength is rejected by many experts, including those who are considered to be leaders. This is because the emergence of the magical power is not consistent and there is not any super-natural element in it. The belief that leadership is a skill which can be learned and applied also represents a belief that leadership is

knowledge. Many people agree that a leader has to have the vision and spirit. Nevertheless, those abilities are also owned by people who are not competent as leaders. Vision and spirit can be developed through training, but in an organization, it is insufficient to rely only on vision and spirit. Specific training is needed to develop other leadership qualities.

Recent studies on leadership state that leadership represents a set of skills and has certain specifications. There is one unique matter, i.e. a successful leader can carry out his/her leadership process by performing appropriate specific approaches in every situation. One approach should be applied to one condition. The characteristic of leadership that is most important is developing skills to lead, and deloying them in the appropriate situation and time. Seemingly effective leaders who are wedded to only one style may become rapidly unseated when circumstances demand another. For example, Margaret Thatcher, the epitome of conviction leadership, rapidly lost the thread (and her position) when consensus leadership may have been more appropriate. Likewise, hospital leaders need to recognize the style of leadership to be applied in certain atmospheres in hospital management. Examples from the field suggest that only a few leaders are capable of leading people effectively, knowing what they were facing and how to handle the situation by using their various leadership styles in response.

Types of Leadership Style

Some studies have declared that the efficacy of a leader lay in his/her expertise in applying certain leadership styles or types for specific conditions in a timely manner. It has been identified that effective leaders are those who succeed in developing some diverse leadership styles and applying them in each time, place and situation (Goleman, 2000).

Understanding the models of leadership is not difficult - the most challenging part is in finding the accurate momentum to apply each style, in each phase of hospital management, within a dynamic changing context.

Table 30. Tables of Leadership Style

Style	Application
■ Coercive leaders demand immediate compliance	useful to lead people out of a sinking ship
■ Authoritative leaders mobilize people towards a vision	useful when an important change is required
■ Affiliative leaders create emotional bonds and harmony	useful to bind teams in difficult times
■ Democratic leaders build consensus through participation	useful to encourage input from valuable team members
■ Pace-setting leaders expect excellence and self direction	useful to get quick results from a good team
■ Coaching leaders develop people for the future	useful for long term development of key members of a team

Effective leaders retain four main leadership styles, i.e. authoritative, democratic, affiliative, and coaching. Coercive and authoritarian styles are possibly suited for certain situations (for example, at a time when a hospital is working on fundamental change), but they may cause resistance if applied in everyday routine situations. In a routine situation, human resources will not be comfortable working under a situation full of pressure. Because of that, it is necessary for a leader to develop leadership skills, but what it is more important again, is to develop sensitivities in applying certain leadership styles for a specific situation.

7.   Referral system

One health system obligation of hospitals towards the citizens it serves is to acknowledge their right to continuity of care from the various levels of health facility. Clear referral guidelines must therefore be designed by hospitals and accommodated in their structure and function. This need not hamper their business perspective inasmuch as primary level health facilities can also be viewed as clients. Especially when there is competition between hospitals, primary health centres, private practitioners, and private clinics can decide which hospital to refer a patient. A hospital that does not offer the expected quality and structure to receive referrals may lose income when the hospital is not trusted and health workers direct patients to a different hospital. The hospital management should therefore consider referral in addition to its other functions and should allocate appropriate

space and importance to referral in its mission statement and business plan. Even where clients and health workers have no choice, the hospital still has a social and ethical obligation to accept referred patients, even if they cannot pay for services.

The district hospital is commonly understood to have three main roles within the district health system, namely:

- to support health workers in clinics and community services both in terms of clinical care and public expertise,
- to provide first level hospital care for the district, and
- to serve as the place of first referral from clinics and community health centers and to be responsible for referring patients to a higher level of care when necessary.

Referral should be understood as the process in which a health care worker determines that the patient requires additional and/or more specialised services or when a problem occurs which she/he cannot handle. In many countries this is coordinated by standard operation procedures or guidelines provided by the health ministry.

In addition, referral hospitals can and do play a quality improvement role towards primary health care facilities and their workers through feed-back on referred cases and more generally through the training they provide to midwives and nurses to improve clinical practice. Referral hospitals may also have teaching responsibilities for medical, midwifery, and nursing students.

Indonesia's National Health System (Ministry of Health. The National Health System; Jakarta: Ministry of Health; 2009) defines the referral system as "a reciprocal delegation of authority and responsibility in disease management or health problems. The term referral is used in relation to referral of clinical condition for the purpose of diagnosis, treatment and rehabilitation, by delivery of patient, specimen, or knowledge associated with the disease. In addition, referral may also be used in reference to health referral for the purpose of disease prevention and health improvement, for example medical equipment, technology, and operational system."

The Indonesian Health Referral System is guided by Minister of Health Decree 032/Birhup/72 dated 4 September 1972 concerning implementation of the referral system, Minister of Health Decree

128/2004 concerning Basic Policy for Primary Health Centres, and the 2007 Action Plan of the Directorate General of Medical Services, Ministry of Health. Those guidelines provide the foundation for creation of a more comprehensive, updated concept of the referral system in Nusa Tenggara Barat as a practical guide for decentralised implementation. The following flowchart describes referral in NTB province as presented in the guidelines developed with assistance from the SISKES Project:

Box 15.   Referral system flowchart - NTB

General Practician / Midwifery Practices	Class A / Special Hospitals Jakarta / Surabaya
	Provincial Public / Private General Hospitals in Mataram
	Class C / Public / Private General Hospitals in Districts / Municipality
	Class D / Public / Private General Hospitals in Districts / Municipality

Health labs, psychiatric hospital, eye clinic, port health services

Primary health care centers with inpatient facilities, primary health care centers providing basic obstetric and neonatal services

Village Maternity Clinics	Village Health Post	Integrated Health Post	Village Maternity Clinics	Aux. primary health centres

Community   -   Clients   -   Patients

As a decentralised country, Indonesia faces special challenges in integrating the hospital within the district health system. Attention must be given to

referral system organisation and management, and the chain of authority and responsibility of each health service unit involved must be clear with respect to regulation and coordination. Equitable provision of health services to the public requires effective coordination of referral services. This coordination can be achieved by designating the lines of authority and responsibility for each health service unit, with the head of the West Nusa Tenggara Provincial Health Office taking the lead in the coordination of referrals. The highest referral hospital in West Nusa Tenggara Province is the Provincial Hospital, and because the entire referral system must cover more than one district or municipality, coordination between neighbouring district and municipal health offices is vital.

District/municipal hospitals are the normal referral points for the primary health centres. District/municipal general hospitals are authorized to have specialists in four main fields (internal medicine, paediatrics, obstetrics/gynaecology, and paediatrics), and they should be able to deal with referrals from district/municipal general hospitals that do not have the particular specialist needed. Provincial general hospitals are generally class B hospitals and serve as the referral centres for class C or D district and municipal general hospitals as well as for health facilities such as the Military Hospital, and private hospitals in the province. In West Nusa Tenggara, the Provincial Hospital also has additional technical referral units to serve the province, including the regional health laboratory, psychiatric hospital, eye clinic, and port health office.

Box 16.   Referral hierarchy in the Indonesian health system
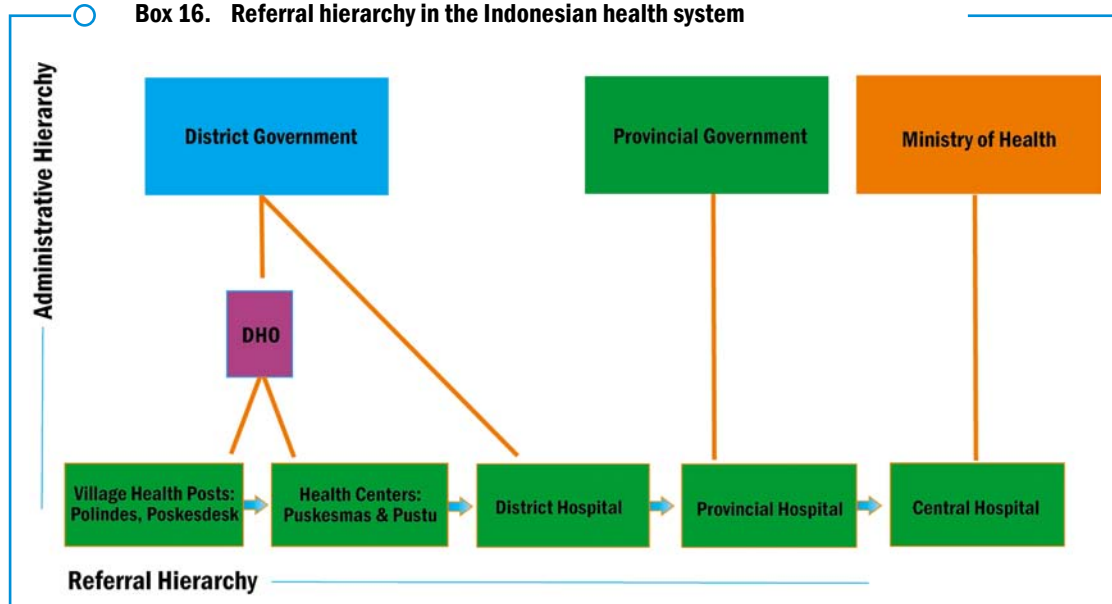
The fact that the district and provincial hospitals are not under the general provincial/district health structure necessitates additional effort in communication and coordination between primary and secondary levels to clarify mutual expectations between health services and to ensure clear and agreed guidelines for health facility relationships, the flow of patients, and other aspects of referral. Clear and practical standard operating procedures are especially important for cases of emergency referral. An ongoing exchange of information on diagnoses and preparation of referral patients is important in improving the quality of care at all levels and reducing risks for patients and preventing avoidable mortality. Institutionalisation of back-referral letters from hospital to the referring primary level, together with a health information system integrating all levels, is crucial to coordination of care levels despite hierarchical differences. Such information also provides the district/provincial health authorities with a global picture of health problems, trends, and risks.

Summary of module content:

This module describes the governance of hospital organization, the organizational structure, and the application of strategic management for hospitals and their role in the referral system. For any organizations, developing the right strategy is critical for their sustainability as it translates the organization mission and vision into operational strategies. This has to include the link to the primary health care level as well. To achieve the intended vision, the process of developing the strategy must be followed by effective dissemination, implementation and evaluation.

Reflective questions:

After reading the module, apply the following questions for your hospital:

1. How do you improve the governance system in your hospital?
2. Can you align the tasks and responsibilities between managers and "the owner" of the hospital?
3. How do you link with the regulator in the health system context?
4. What can be done to improve your strategic planning document?
5. What is your strategy to communicate and apply the current mission in order to achieve the hospital vision?
6. What is the weakness and strength of your organizational structure?

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Chapter Eight

Quality Improvement Action Project. Making concrete changes in the hospital: the quality improvement exercise

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Overview of the chapter:

After completing four learning modules in previous chapters, this chapter encourages participants to start initiating changes in the hospital. Frameworks of quality improvement discussed in previous chapters are summarized and four steps in conducting action research are used to describe the quality improvement action project.

Content:

1.   The Quality Improvement exercise

The final stage of the course provides an opportunity for participants to apply the theoretical knowledge of the course to identify a practical issue related to quality in their hospital and together working towards a solution. For the course, it brings the focus back to the first teaching block - the focus on patient safety - but also draws on their understanding of clinical

management systems and business functions of the hospital. Working together with the management of the hospital, it enables participants to demonstrate leadership, and to experiment with new models of clinical governance.

Importantly, the project is team work, allowing the participants to address an issue of significance in the two months allocated to the task, drawing on their individual strengths and their roles within the hospital structure, but requiring a collaborative problem solving approach. In the pilot of the Hospital Management Training course, the choice of projects was varied: a focus on patient safety in the public surgical ward; creating the infrastructure for patient safety in the hospital; improving emergency intervention times through the introduction of effective triage in the hospital emergency room; infection control measures in the obstetric ward of the hospital.

1.1 Quality Improvement

While the concept of quality had its origins in systems intended to guarantee consistent standards of production (Quality Assurance, Quality Management), managers have recognized that quality applies across every aspect of the health system. Essentially Quality Improvement is the ongoing process of performing to the highest possible standard, and seeking through evaluation and analysis to set progressively higher and more efficient standards across the organization (Schneider and Stierle, 2007).

In health, the dimensions of quality are generally accepted – WHO (2003) suggests that services should be:

- Effective
- Efficient
- Accessible
- Timely
- Acceptable
- Evidence-based
- Equitable
- Safe

Of course, these quality dimensions need to be kept in balance with each other – a cesarean section may be requested by the patient, but given

the evidence and safety, it is more effective to do normal labor unless it is indicated otherwise from a clinical perspective.

Systemic Quality Improvement begins with a detailed understanding of the processes of care that the service provides – not simply what is done, and what resources are used, but the way in which it is performed – and the policies, people and resources used in those processes. In order to improve results, attention needs to be given to each of these, at the level at which the changes can be made. At times, improving quality at the micro-system level may draw attention to policy changes that need to be made at the macro-system level. For illustration, excessive use of secondline drugs such as Ciprofloxacin for TB, leads to the pharmaceutical and therapeutic committee in the hospital to review its standard operational procedure for using any secondline drugs in TB.

The European Foundation for Quality Management (EFQM) Excellence Model is useful to illustrate all aspects in order to improve key performance results, measured in form of hospital related indicators in the case of the QI action project. It can first be used to analyze the present situation valuable for the background information with a more in depth analysis of the process and showing the existing results, which the team wants to improve. The improvement can be expressed in quantified changes.

Figure 64. The European Foundation for Quality Management

Source: www.efqm.org
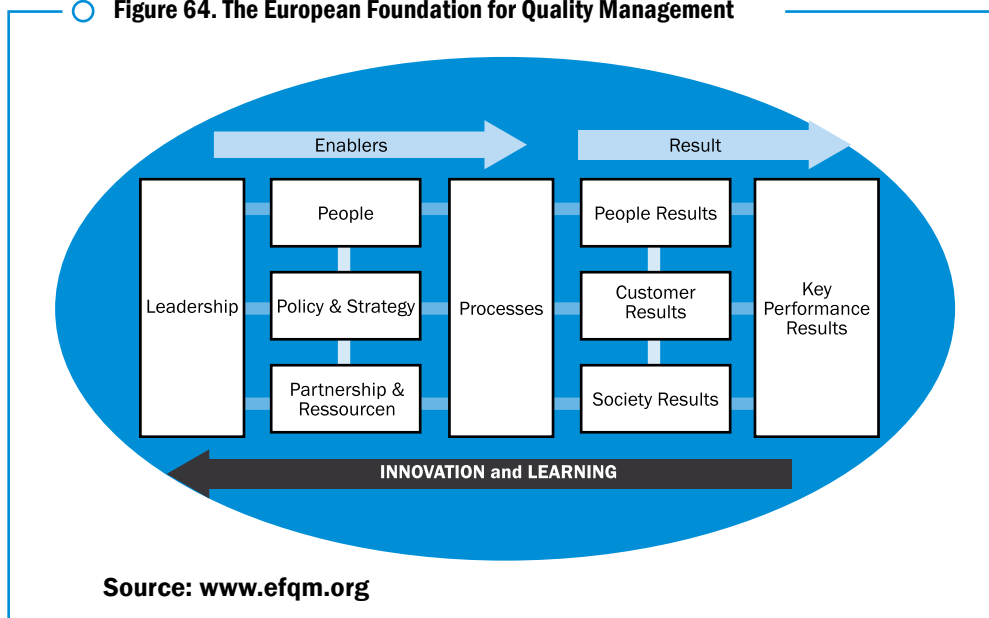
The concept is based on strong and valuable leadership; in the case of the HMT this underlines the importance to have the hospital directors involved and gain their understanding and support for the whole exercise, in particularly also for the QI action project!

Figure 65. Success Factors for QI action

As the World Health Report 2000 indicates, health systems need to be both good and fair – they need to provide effective care, but also be responsive to people's expectations, treating them with dignity and respect. Changing maternity ward visiting arrangements may reduce the transmission of infection, but the needs of families to bond with new born babies need to be considered as well. In common with the Action Research cycle, it asks managers to work with their staff to analyse the current processes, identifying areas where improvement is possible; plan to take action; implement those changes; and evaluate the action they have undertaken.

1.2   Berwick's Chain of Effect in Improving Health Care Quality

The Quality Improvement exercise is grounded in Berwick's observations of the chain of effect that results in improving health care quality, with

the patient linked to the environmental context through the systems of health care, and changes at each level having an impact at the next (Berwick, 2001; 2002). While he identified four levels of interaction, and recognized that change at every level would be necessary to impact on the quality of care delivered to the patient in the community, it is the clinical microsystem of care delivery in which patients have direct contact with the hospital system to produce clinical outcomes for the individuals and the populations.

1.3 Action Research

The Quality Improvement exercise uses an Action Research approach, engaging both the action researcher and those being researched in a joint collaborative process of change. The use of this approach is most appropriate as action research is defined as a form of enquiry that enables practitioners everywhere to investigate and evaluate their work (McNiff dan Whitehead, 2006). This definition covers basic understanding of action research. First, action research is a scientific enquiry method that can be applied. Second, action research can be applied to investigate and evaluate ongoing activities in their own organizations.

Waterman et al. (2001) gives a comprehensive definition and characteristics of action research. It is stated that "action research is a period of inquiry, which describes, interpretes, explains social situations while executing a change intervention aimed at improvement and involvement. It is problem focused, context-specific, and future oriented. Action research is a group activity with an explicit critical value basis and is founded on a partnership between action researchers [HMT participants] and participants [i.e. key stakeholders in the hospital], all of whom are involved in the change process. The participatory process is educative and empowering, involving a dynamic approach in which problem identification, planning, action and evaluation are interlinked. Knowledge may be advanced through reflection and research, and qualitative and quantitative research methods may be employed to collect data. Different types of knowledge may be produced by action research, including practical and proporsitional. Theory may be generated and refined, and its general application explored through the cycles of the action research process".

In summary, the following features are inherent in action research as a period of inquiry:

- Explain situations in parallel to implement change
- Aim for involvement and improvement
- Necessitate a group activity
- Require partnership between action researchers and participants
- Involve a dynamic process which is educative and empowering
- Engage participants in all the cycle
- Begin with problem identification, planning, implementation and evaluation
- Apply qualitative and quantitative data collection
- Generate practical and propositional knowledge

A particular strength of this approach is described by Waterman et al. (2001) as a result of a systematic review of action research. The following characteristics are fundamental in action research and it is distinctive to other research methods:

- The cyclic process of action research, which involves some kind of action intervention (hence, it is called action research); and
- The research partnership, in which the degree of involvement or participation of the researched may range from cooperation, when the research participants work with outsider to determine priority but responsibilities remains with the outsiders to direct the process, to collective action.

Different phases in the cyclic process of action research exists. The most practical one is described by Coghlan and Brannick (2001). Action research consists of four main phases, i.e. diagnosing action, planning action, taking action and evaluation action. As indicated by the terms used, the first phase of diagnosing action is aimed to describe the current performance, identify priority problems, diagnose the causes of a particular problem and identify potential actions to solve the problem. Working together with the key hospital stakeholders (or the referrence group), the action research team then selects the most appropriate action and in the second phase (planning action), involves the relevant hospital team to make a detailed plan for implementing the action. The intervention is implemented for a certain period of time before its evaluation. The evaluation may focus on the process (by doing observation or interview during the implementation period) as well as the result (for example by comparing the conditions before and after the action). Add observation during site visits.

Figure 66. The action research cycle (Coghlan and Brannick, 2001)

Diagnosing
for Action

Action
Research

Evaluating
Action

Planning
Action

Taking
Action
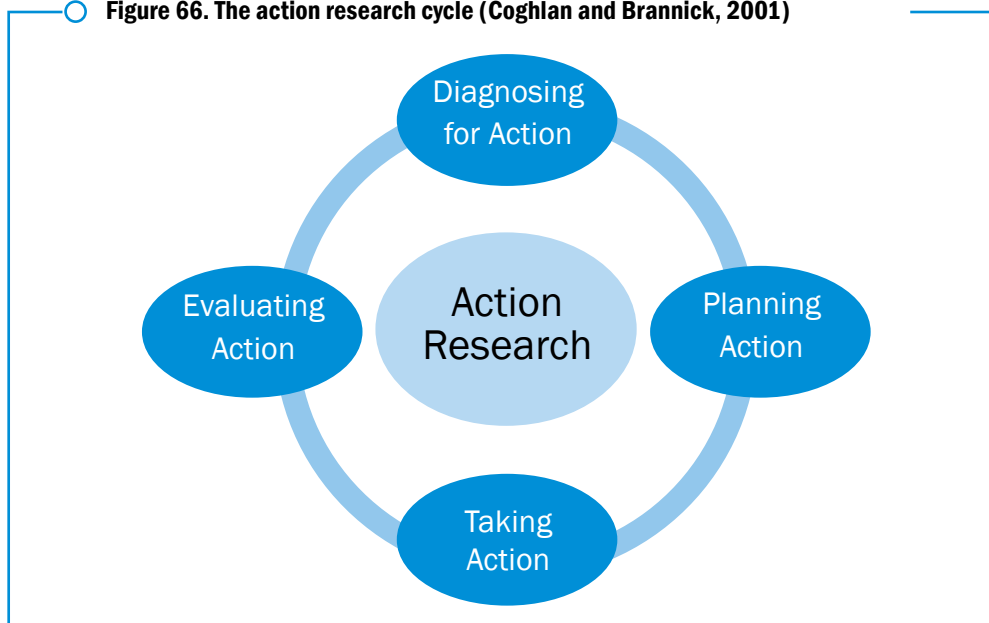
The second most distinguished feature of AR is in its partnership between the action researcher and the researched. The degree of participation or involvement varies from low up to optimum involvement: co-optation, compliance, consultation, cooperation, co-learning and collective actions (in Waterman et al., 2001). If the action researcher is an outsider, then a collaborative team representing those who are relevant to the problem needs to be formed. In HMT, the action researcher is the HMT team (insider). Depending on the problems, HMT team may or may not work with an existing team in the hospital or an ad-hoc team formed by the hospital. For example, in a hospital in West Nusa Tenggara province of Indonesia, nosochomial infection was chosen as a topic. The hospital team (action researcher) collaborates with the existing nosochomial infection team in the hospital, with the objective to reduce nosochomial infection in the labour ward.

2. Developing the Quality Improvement exercise

The steps in developing the quality improvement project are similar to the steps undertaken in project planning or in planning applied research. The quality improvement project has an educational objective – integrating participants' knowledge through a practical exercise – but also gives them an experience of creating sustainable organizational change. To achieve

both objectives, they need to position themselves no longer as simply training participants, completing a task for assessment, but in their roles as part of the management function of the hospital.

2.1 DIAGNOSING FOR ACTION: identifying a quality issue and points of actions

The choice of quality issue is important: it must be significant, but realistic in scope. HMT participants need to be confident that they can undertake the project in the two months allocated, and demonstrate change. This short period of time was accepted as the action project is part of the training and needs to be completed in a manageable time frame. It should be thought of in the longer term perspective – as the starting point for a new culture within the hospital team. The diagnostic process involves a deep understanding of processes as they currently stand, in order to be able to identify points of intervention. Analysis of existing data, additional research surveys, interviews and focus groups may be needed to clarify the priority issues and potential actions for the hospital. Weighting factors may need to be introduced to the analysis process when considering the contributing causes for specific problems, as not all causes have the same relative importance in relation to the problem. Reaching a consensus on the key problem and its causes, and mapping out the current situation accurately makes planning action possible. Feasibility is also an issue – the time and resources available need to be considered when selecting the intervention that will produce the most significant and measurable results.

The focus on quality improvement will often draw attention to a number of inter-related problems, but the project needs to be able to focus on one of these. Success in this project should lead to a commitment to further initiatives for change, with a continuing cycle of quality improvement. In one hospital, maternal mortality was identified as a key issue, with improved infection control within the labour ward as the specific target for the quality improvement project. As part of their problem analysis, however, they identified eight deaths in the hospital in the past year from post partum haemorrhage, eclampsia and uterine atonia: issues that also clearly demand an urgent organizational response. Raising awareness of the potential of quality improvement in one area should lead to an ongoing process of change.

2.2 PLANNING ACTION: developing the pathways of intervention

2.2.1 Identifying outputs and activities

Achieving the objectives of the project is dependent on a series of actions that together produce planned outputs for change. The planned activities may include meetings and workshops, interviews, focus group discussions and surveys. The outputs may include redefined job descriptions, applications for resources, restructuring of services etc. A clear job description for the new role of Triage Officer is necessary in the Emergency Room project, but a check list for indicators of severity to separate between true and false emergency will also be required. With staff roles currently divided between separate Surgical and non-Surgical sections in the Emergency Room, a combined service will need new job descriptions for all staff, and a new hierarchy of responsibility. Physical changes in the room arrangements will need to accompany these changes. Some additional equipment may also be needed and should be considered and discussed with the hospital director. The lack of equipment is often used as an excuse as to why no positive change can be reached, when exploring the available alternatives may provide current options for taking action. In any case, projects should not be dependent on high levels of equipment support – it is the system that should be the focus.

2.2.2 Negotiating support and allocating responsibilities

Participants selected for the Hospital Management Training course come from a wide spectrum of professional backgrounds, and from differing positions of authority within their hospitals. To ensure that they are able to achieve effective change, 'political' support from the director, but also from key stakeholders, is crucial. The choice of an appropriate topic must be negotiated with the director of the hospital and with key staff to secure this ongoing support. In the case of one of the larger hospitals, the director recognised that the current organization of activities in the Emergency room did not lead to efficient management of acute cases, and supported the project proposal to introduce a triage system. In this situation, his support was crucial in two particular areas: firstly allocating resources for the creation of a triage room, and secondly discouraging inappropriate referral from the polyclinic area after-hours.

A member of the team will need to accept responsibility for each activity planned. Where these responsibilities form part of existing roles within the hospital this is relatively easy; where this is not the case, participants need to collaborate with key stakeholders to ensure that the activities are completed.

2.3 TAKING ACTION: implementing the project

The implementation of the project should follow the plan, though the dynamic nature of hospitals as complex adaptive systems means that implementers need to be constantly monitoring progress and adapting the plan as necessary. The process of implementation should be carefully documented through the minutes of regular management meetings. Quality improvement initiatives commonly introduce new procedures, equipment, systems and services, or mechanisms, and negotiated agreements on these need to be documented. New job descriptions or regulations may need to be introduced, and the practicalities of implementation considered. The improvement of infection control in the Obstetric wards was accompanied by a regulation to only admit two family members at a time – but the discovery of neonates taken by their grandmothers out into the family waiting areas to meet waiting aunties and cousins means that the logic behind these regulations will need clear communication to families if they are to be effective. On the other hand it also has to be made sure that staff respects roles linked to that and gives the good example.

HMT participants should also keep an eye on sustainability of their quality improvement projects. The incorporation of new activities into the recognised routines of hospital wards needs continuing reinforcement, with positive rewards for compliance.

2.4 EVALUATING ACTION: assessing the project

The Quality Improvement exercise aims to bring about change – change that will continue to be sustained in the hospital, and that will lead to continuing change in related areas. The infection control project in the Obstetric Ward must lead to consideration of the other major contributors to maternal and infant mortality, and proposals to deal with them.

2.4.1 Selecting indicators for monitoring and evaluation

Box 17. Response time in the emergency unit

The HMT team at Bima district hospital selected "Improving the response time in emergency unit through implementation of a triage system" as the topic for quality improvement action. Within two months time, the team managed to redesign the triage room (see below), develop the triage system and its standard operating procedure, standardize the equipments required and revise the format of medical record at the cost of about 1,500 Euro. As a result, the response time has been improved from 5.7 minutes to 3 minutes, meeting the target of SPM indicator from MOH.

Before	After

Figure 64. Response time in the emergency unit
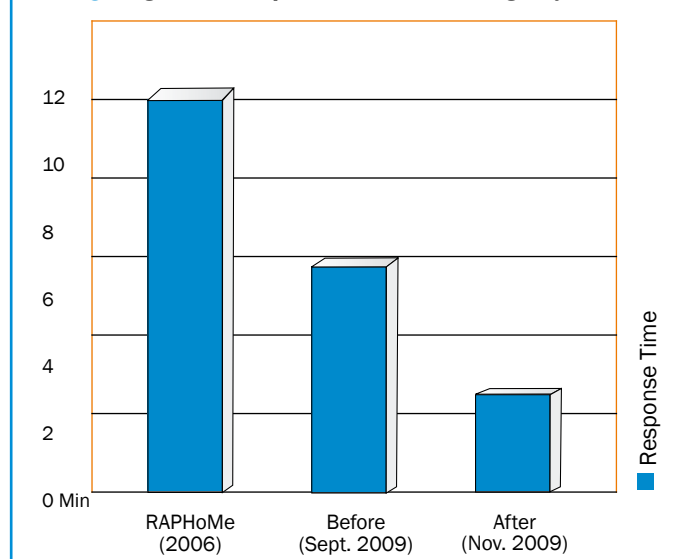
Change as a result of the project should be demonstrable over time. Appropriate indicators need to be selected that are linked to the interventions planned. Where possible these should coincide with data

already collected: quality improvement is dependent on evidence and should strengthen the Health Management Information System. Systems developed should articulate with the reporting requirements of the District and Provincial authorities and the Ministry of Health. For example, review of the patient safety proposal for the Surgical ward showed that baseline indicators for patient safety had not been identified, and HMT participants needed to review this area before a notification system for medical errors and adverse events could be developed and the project could be implemented. The data collected from these systems should be in a format that is consistent with the requirements of the National Patient Safety Committee – and a successful initiative should be promoted to other district hospitals so that Provincial reporting becomes possible.

Even over a relatively short period, change should be measurable using the agreed indicators and measurement procedures. A reliable baseline is necessary to enable comparison. The kind of change expected will depend on the priorities identified and the project approaches selected; examples include:

- Shorter time needed for procedures
- Higher satisfaction rates among patients and their families
- Better recording and reporting of data – and appropriate action in response to this information
- Better diagnosis and treatment for patients and clearer information provided to them and their families
- Safer practices, and improved understanding of practices
- Increased compliance with treatment and regulations
- Improved facilities for patients and their families.

Information for evaluation may be received from a variety of sources – routine data collection may provide some information (infection rates, readmission to hospital, return to surgery etc). Key informant interviews with users or stakeholders may provide qualitative evaluation of strengths and weaknesses of the project, or surveys may formalise this feedback into a quantitative format. Care needs to be taken with these instruments so that reliable information is provided. And evaluation is only useful if it results in action – completing the action research cycle and ensuring on-going change.

Evaluation of the project may point to areas that need modification or support in order for the project to continue. When designing the project budget, consideration should be give to how these activities will be supported beyond the life of the project – and the current roles of HMT participants.

3. Developing an action research proposal

The topics for quality improvement action project were selected by HMT participants in consultation with the hospital directors and key stakeholders. Each hospital is advised to link the quality improvement project to the initiatives in reducing maternal and neonatal mortality as the general context, and taking advantage of previous situation analysis available from the block exercises and presentations. After deciding the topics, each hospital needs to develop a clear proposal for the quality improvement prior to implementation. This document serves several purposes: it allows group members to clarify their intentions, and to reach agreement on what will be undertaken as part of the project; it provides a basis for negotiating with hospital colleagues around intended interventions; it allows academic supervisors to assess the appropriateness of the project, and the adequacy of planning; and it is used for obtaining adequate funds to carry out the project.

A basic template for the proposal would generally include the following components:

A. Title Page
- Project title
- Project location
- Project leader and members

B. Background and Objective
- Background
- Quality problem
- Objectives
- Hypothesis for Improvement

C. Action Research Protocol
- Diagnosing Action
- Planning Action
- Taking Action

■ Evaluating Action

D. Workplan

E. Budget

3.1 Title page: attracting others

This part contains general information of the project which will be of interest for stakeholders involved in making decisions about the project (such as hospital director, organizations providing financial support etc.). It consists of the project title, location in which the project is conducted and the contact person for communication purposes (project leader and members). The project title will also create expectations among the readers on the specific outputs intended to be achieved at the end of the project, background information needed and activities leading to the outputs. For illustration, one hospital chose reducing nosochomial infection in the delivery room. Despite a clear output, the background section did not include facts and narratives related to the problem of nosochomical infection.

3.2   Background and objective: setting the tone and clear outputs

This section of the proposal sets the tone for the action project. It has several purposes: to describe the context in which the quality improvement project is conducted; to motivate the readers on the relevance and importance of the project; to enable the researchers themselves (in this case, the HMT participants) to demonstrate and ensure smooth linkage between the problems and the objectives; and to convince the stakeholders (hospital leaders, funders, etc.) in order to obtain their commitment and support to the project.

3.2.1 Describing the background

The key feature in describing the background for an action research proposal is the relevance of the project. Relevance can be highlighted in relation to the organization itself, broader literature on the subject, as well as its impact on the patients if the problem continues.

From the organizational point of view, the description includes some facts and narratives to illustrate current situation of the hospitals and relevant

units, relevant issues related to strategic plan as well as operational, problem analysis, and existing initiatives already undertaken to solve the problems (if any). The literature on the topics is then used to strengthen the importance of the problem in a wider context (province, national or international), knowledge on the facts and existing interventions to solve the problem and effectiveness of interventions. These are necessary for action researchers before planning and implementating the actions in their hospitals. Positive experiences seen during benchmark visits in country or elsewhere can also be used here to further underline the plan.

Based on the organizational context and literature view, consequences for the patients and families are described further. Both clinical outcomes (such as prolonged length of stay, morbidity and mortality, default treatment etc.) and costs (direct and indirect costs, treatment costs etc.) may be used to illustrate the financial burden to the patients. Measures such as disability-adjusted life years or quality-adjusted life years prevented may also be derived from the literature. Similarly, the use of patient expressions or complaints adds the emphasis of the implications for the patients. For illustration, the following expression was made by a young woman, mother of two underfive children who were treated for TB.

"I have been seeking treatment from my usual private doctor, until one day I coughed blood. I was then referred to the nearest health centre, and after they checked my sputum, I was told to have TB. I didnot regret that I sold the piece of land that I have to buy drugs [prescribed by the private doctors], not until I knew that TB drug is free"

Improving patient safety in the surgery ward was selected as the project topics in another hospital. In the background, it was stated that findings from a previous survey on patient safety culture conducted in 2008 showed that the overall level of patient safety culture was 57.7%. Based on this survey, activities were carried out to improve perception on patient safety and reporting of adverse events, near-miss and medical errors. Selection of the surgery ward was motivated by the literature review on epidemiology of medical errors, which stated that surgery is one among the high-risk services, prone to medical errors. Besides, patient safety has not been socialized in this surgical ward.

3.2.2 Identifying quality problems

Once the problem is already selected, problem analysis is then carried out in order to select the cause of problem which will be improved throughout the intervention. For the quality improvement exercise, quality problems can be defined broadly (for example by referring to the EFQM excellence model or 'doing better next time'), or more specifically as quality problems. Applying broader definitions of quality, the quality improvement exercise can be used as an opportunity to improve any aspect, both managerial and clinical aspects, in order to deliver better care. For instance, projects may focus on reducing waiting times of elective surgery, improving response to patient complaints, improving in-house training effectiveness and many others. While if a more specific definition of quality is referred to, one needs to justify the quality problems, by using quality dimensions, quality indicators or referring to quality management system. During the preparation of the project, the team should also clarify what hypothesis is behind their envisaged action; why do they think that this action will have an impact on quality improvement and not another and what are their criteria to make the choice. This has to be clearly shown in the action protocol.

To illustrate further, high maternal mortality may not be considered solely as a quality problem if the underlying cause is lack of transportation to refer patients to the nearest obstetric emergency care or lack of patient/family education on the danger sign during labor. Though lack of transportation and lack of education may lead to poor outcome (maternal death), the actions are much beyond quality itself. But there may still be a way to address these issues later through advocacy with external decision makers, once the QI action project has been demonstrated to be successful. This would be the appropriate time to address aspects beyond the direct influence of the hospital, and advocate for change in those areas.

3.2.3 Setting clear objectives

For the project to be evaluated as successful, clear objectives need to be mapped out. They should be SMART:

Specific
Measurable either qualitatively or quantitatively
Attributable – so that changes are linked directly to the action proposed
Realistic, and
Time-bound – so that we know when to evaluate the expected change.

In one project which aimed to improve patient safety in the public surgery ward, the objectives included identifying rates for nosocomial infection, medical errors and adverse events. These would provide a baseline from which change could be measured, however, the key objectives – improving the culture of patient safety in the ward and strengthening the adverse event reporting system need more specificity in order to set directions for change.

3.3 Action research protocol: developing the tasks and team responsibilities

Having provided sufficient background and clear objectives to the readers, this part reflects the action research cycle. It begins with identifying appropriate action, planning actions in response to that problem, then taking action by implementation the interventions in stepwise manner and evaluating the change. The cycle continues if the outputs are not as expected or in a situation whereby different actions are needed to fully solve the problem.

The previous sections have described each phase in the action research cycle. In the proposal, all activities that will be carried in each phase are clearly outlined. Activities may vary from data collection activities (e.g. survey, interviews, focus group discussions, observation etc), concensus building activities (e.g delphi technique, nominal group technique, workshops, seminars), or activities to reinforce the intervention (sending remainders or letters, issuing letter of decree, endorsement of standards, a new position created etc).

The following illustration is taken from initiatives to implement critical pathway for TB case management in the outpatient unit of two major hospitals in Indonesia (Jasri and Utarini, 2009).

Table 24. Example of activities in the action research cycle: critical pathway for TB case management

Table 31. Example of activities in the action research cycle: critical pathway for TB case management

The cycle	Activities	Key persons
DIAGNOSING ACTION	• A preparatory meeting to explore the policy on quality and communicate the project • A two-day workshop to select appropriate intervention for improvement	Hospital director, chair of medical committee Director of medical service, medical committee, clinical departments (lung, internal medicine, paediatrics), nurse, medical record, laboratory
PLANNING ACTION	A four-day workshop to work out detailed steps, develop a clinical pathway and a check-list • A seminar to disseminate the clinical pathway and how to use the check-list, to decide which units are involved and to appoint persons in charge during this project • Pilot implementation of clinical pathway and the check-list	Specialists, medical doctors in the residency training from three clinical departments, head of ward, nurses, medical record, TB staff in the outpatient
TAKING ACTION	Implementation of clinical pathway and biweekly monitoring-supervision from the facilitators	The same as above and facilitators

Table 31. Example of activities in the action research cycle: critical pathway for TB case management - continued

The cycle	Activities	Key persons
EVALUATING ACTION	• Clinical audit to assess quality of TB care (to be compared with the first audit before this action research) • A seminar to disseminate the result, implication for the hospital, lessons learned and follow-up activities Director of medical service, medical committee, clinical pathway coordinator in the hospital, clinical audit committee, clinical departments (lung, internal medicine, paediatrics), physicians, nurses, medical record staff	

3.4 The Workplan: setting time lines and sequencing activities

Having identified the necessary activities to produce the outputs for the project, these need to be sequenced to ensure that the project moves smoothly without 'bottlenecks'. A workplan maps out the activities against a time line, and enables the participants to accurately estimate the time necessary for completion of the project. Where estimates indicate that the project cannot be completed within the two months allocated, redesign of the project may be necessary. Participants need to be aware that some steps are critical to the progress of the project as a whole. In the case of the Triage project, construction will need to be undertaken by the hospital to allow the new roles to function optimally – this is beyond the control of the project itself. The Surgical patient safety project will need agreed indicators, appropriate forms and suitable software developed before data can be entered and analysed.

Table 32. Template for the action project workplan

AR phase	Activities conducted	Timetable (by week)	Expected result	Indicators
Diagnosing for Action	1. 2. 3.			
Planning Action	1. 2. 3.			
Taking Action	1. 2. 3.			
Evaluating Action	1. 2. 3.			
Next Possible QI Intervention planning cycle	1. 2. 3.			

3.5 Budget: Estimating the financial resources

Most quality improvement projects are not cost neutral – even those that do not require major structural changes need support for meetings and 'socialisation' of participants – consulting them during the development of the project, raising awareness of the importance of the initiatives, educating them around necessary changes in their own positions. The project on improving infection control in the Obstetric wards will also need changes in the behaviours of patients' families, providing facilities outside the ward for waiting families to rest and prepare meals. Each element of the proposed project that incurs a cost should be included in the budget proposal, with sufficient detail to enable reviewers to make a judgement on the amount requested and the necessity of the item to the success of the project. This can also be measured against cost reduction, e.g. reduced use of antibiotics with fewer infections, shorter stays in the hospital, reduced opportunity costs for the patient, as described in 3.2.1. The budget can be summarised in a form similar to the example below. Where appropriate, indicate what the proposed source of the funding will be. All parties (the hospital, the course sponsor, the educational institution) will need to agree to the budget before the project can be implemented.

Table 33. Template for the budget of quality improvement action

No	Item	Days	Persons		Unit cost	Total	Hospital Budget	Sponsor	Other
			Male	Female					
Heading – Expected Output 1:									
Heading – Expected Output 2:									

4.   Evaluation of the Quality Improvement exercise

The Quality Improvement exercise engaged the Educational institution, the sponsors and the hospital itself in the evaluation process. The HMT participants are required to present their proposal and then the findings of the evaluation, and to defend progress with colleagues in the hospital context. Site visit to the project location is also undertaken by the evaluators to have a clearer sense of the challenges, experiences gained and ownership of the project. A public defence raises the profile of the Quality Improvement exercise, and may generate commitment for maintaining the activities. A recommended weighting for the assessment is provided below. The following key stakeholders are asked to fill in the evaluation form: hospital director and key stakeholders relevant to the project, the HMT team, HMT team from other hospitals, policy makers, funders, and facilitators. In the final score, average scores from each assessor group (grouped into hospital, facilitator and funders) were calculated. The scores were then used as individual scores and average of these scores was used as the final score.

Table 34. Assessment Grid

Assessment grid for QI Project Hospital Management Training (HMT)
Reviewer:

Criterion	in %	Hospital A Points (max. 10)	Hospital A Assessment (2)x(3)	Hospital B Points (max. 10)	Hospital B Assessment (2)x(3)	Hospital C Points (max. 10)	Hospital C Assessment (2)x(3)
	(2)	(3)	(4)	(3)	(4)	(3)	(4)
1. Preparation & Implementation	5						
1.1 Identification process of the title for the QI project	5						
1.2 Accuracy of the problem identification	5						
1.3 Definition of the indicators to measure success	5						
1.4 Relevance of the QI project regarding the identified problem	10						
1.5 Task distribution between the team for project development	5						
1.6 Involvement of other staff from the hospital in the work	5						
1.7 Support of the hospital director	5						
Total	40						

Table 34. Assessment Grid - Continued

**Assessment grid for QI Project Hospital Management Training (HMT)
Reviewer:**

Criterion	in %	Hospital A		Hospital B		Hospital C	
		Points (max. 10)	Assessment (2)x(3)	Points (max. 10)	Assessment (2)x(3)	Points (max. 10)	Assessment (2)x(3)
	(2)	(3)	(4)	(3)	(4)	(3)	(4)
2. Result of the QI project in form of:							
2.1 Indicators	10						
2.2 Quality of team implementation	10						
2.3 Change result	15						
2.4 Sustainability	10						
Total	45						
3. Post QI Project							
3.1 Follow-up plan	15						
Total	**15**						
Grand total	**100**	■		■		■	
Rank							
1. Specific advantages / risks							
Rank							
			Date, Signature				

Hospital Management Training

The quality improvement exercise has an important integrative function, combining the theoretical knowledge that the participant has acquired with a practical opportunity to allow the participant to demonstrate insight, leadership and capacity for change. But the fact that it depends on the collaboration of colleagues highlights an important shift in the culture of quality improvement in the hospital: this is not about an individual gaining knowledge and recognition, it is about the hospital as a team investing in change that they identify as important for the health of their community. In this sense the quality improvement exercise is a powerful and practical intervention in the development of quality improvement for the hospital and needs to be seen as a pretext for the hospital to replicate such projects in its various centres, rewarding the attention that staff pay to resolving issues and improving services.

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AFTERWORD

The development of this volume has been a remarkable process. It has crystallized professional and personal experience among members of the GTZ SISKES and HRD Projects over more than three decades, building on evidence from projects in Africa and across Asia, and in particular, Cambodia. It has brought together the governments of Germany, the United Kingdom and both central and provincial governments in Indonesia to resource the Hospital Management Training program. It has been linked to regional networks such as SEAMEO TROPMED, providing opportunities to extend the knowledge gained through this process, and the potential for replication in other sites.

Most importantly, it has seen one of Indonesia's most respected universities, Universitas Gadjah Mada, take leadership in adapting its post graduate training in hospital management to meet the specific needs of applied training at the provincial level. At a number of levels, UGM has responded to the challenges that this course has offered – refocusing their teaching approach to deal with the development of groups, rather than individuals, adapting their teaching methodologies to enable training locally, in the hospital environment, twinning with the University of Mataram to ensure local support – both during teaching blocks, but as importantly, during the periods of application of learning.

In this volume, we are aware that we have produced not one, but several texts, addressing several audiences. At the core have been the Four Learning Blocks, where the teaching staff of the project have set down the broad content of their teaching. The sequential logic of these has been quite deliberate – putting the patient first, building on clinical interactions to improve clinical performance, demonstrating how this engages with the hospital as an organization, and with the health system as a whole. Throughout, quality management and patent safety have been dominant themes, with every page seeking to reinforce the application of learning to improving care for the patients. The Quality Improvement project has been constructed to weld together the skills and knowledge gained through the

blocks, and to apply them in a practical exercise that brings demonstrable change to their own hospital environments.

We are aware that there are multiple, excellent texts available that deal with management – though fewer that deal with hospital management - but they have not had to grapple with the issues that hospital managers face daily in the Indonesian provinces. For many of them, the management functions are dealt with in isolations – management information systems, human resource management, financial management etc. What we have brought together here represents the beginning of an ongoing attempt to bridge this gap, to translate the knowledge we have acquired from international degree programs and educational resources into something that has meaning locally, to integrate the functions and apply them to hospital patient care.

These texts will find their most valuable use as they are translated into Bahasa Indonesia and made available to the next wave of students, but the process of mapping out this content, and adapting it so that it becomes relevant to the local, has been invaluable.

But this knowledge is only of value if it is located in a context, and translated into action. Many readers may be familiar with the decentralization of health in Indonesia, with the moves to autonomy for government hospitals, with the rapid increase in private facilities, and the shift to a more competitive pluralistic health system. The introductory sections may serve to remind these readers of the extraordinary dynamism in the system, and underline the need for training at provincial level that prepares hospital management to function in these complex environments. Readers from other countries, interested in implementing similar training, will be aware of the similarities and differences to their own systems, and will be able to recognize the struggle to adapt traditional hospital management training perspectives to provide guidance in often unchartered territory.

For those interested in replicating the training in Indonesia or in other developing country contexts, we have added considerable detail that documents the processes and the challenges of implementing this training. We have been open in this, knowing that others will face the difficulties in selection and recruitment that we faced, the need for commitment at the provincial and district level to guarantee stability within the hospital teams

over the life of their training. We are aware that educational issues – entry criteria, accreditation of the qualification, recognition in the workplace, articulation with other degree programs – will be issues you need also to grapple with. We know that shifting the culture towards group learning and change is difficult, and that workplace dynamics will be a challenge that you will share with us.

But we are confident that the outcomes will be as rewarding as they have been for the creative and innovative team that has built itself around this task, and has taken pride in inviting you to share our journey in Hospital Management Training: New ways to improve services. And most importantly, we are proud of the hospital managers who have completed this training, and trust that their patients will experience the significant change that the training has brought about in their lives.

The Editors and Authors

GLOSSARY

Acceptability	A feature of the services provided or actions proposed by the health service, which satisfy the demand from the population.
Accessibility	**(1)-** Is the ability of all people to obtain the service, and that no obstacle – geographical, transport, language difficulty or lack of money- stop them from receiving service.
	(2)- The feature of the services which are to be availed of by the population; i.e. those which facilitate their use by overcoming geographical, psychological, cultural and economical barriers.
	(3)- The distribution of health resources (for example, personnel and facilities) such that people in need are able to avail themselves of the resources with reasonable convenience and at reasonable cost.
Account	A record of money received or of money spent or both.
Accountability	he concept that one is responsible for one's actions and the consequences of those actions. Professional accountability, as it applies to nursing, implies a responsibility to perform the activities and duties of one's profession according to established standards. It also implies a fourfold responsibility: to one self, to one's client, to one's employing institution, and to society.
Accurate	Correct and exact; free from error.
Accreditation	Accreditation involves endorsing or giving a seal of approval to a hospital, including its ancillary services, and other health organisations. It is voluntary but is supported by incentive. It can be given by government or by a non-government organisation. Example: **(1)** The Joint Commission on Accreditation for Health Care Organisation (JCAHO) and the International Standard Organisation (ISO) are NGOs that accredit health care organisations. Accreditation is a potential powerful mechanism for raising quality standards as it stresses compliance not only with input standards but also with process and output standards. It also gives emphasis on development and improvement.

Achievement	A thing done successfully, especially with effort and skills; the action or process of achieving something.
Action research	A period of inquiry, which describes, interpretes, explains social situations while executing a change intervention aimed at improvement and involvement. It is problem-focused, context-specific and future oriented. Action research is a group activity with an explicit critical value basis and is founded on a partnership between action researchers and participants, all of whom are involved in the change process.
Activity	**(1)**- A group of tasks with a common purpose.
	(2)- A set of tasks directed towards the achievement of a common goal; i.e. the operational expression of a function.
Adequacy	The adequacy of the service depends on the technology in the context of the specific country, environment and tools used in relation to disease.
Adverse event	Any injury caused by medical care
Allocation (of drugs and medical supplies)	Allocation is a supply of drugs and medical supplies to the health facilities calculated by the Essential Drugs Bureau based on the analysis of health service data. It is reviewed on average every 6 months
Attack rate	The percentage of individuals in a defined group who get a disease over a defined time period.
Attitude	A tendency to behave or think in a certain way. For example, one health worker may refuse to see patients when the health centre is closed. Another may be willing to see patients at any time. This is because they have different attitudes to their job.
Attitude - **Assumptions**	Assumptions describe the external factors which are important for achieving the objective, but are beyond the control of the hospital management
Audit (clinical – medical) audit	Audit is an investigation into whether an activity meets explicit standards, as defined by an auditing document, for the purpose of checking and/ or improving the activity audited. Clinical audit is the systematic critical analysis of the quality of care, including the procedures for diagnosis and treatment, the use of resources, and the resulting outcome and quality of life for the patient.

Authority	The right to make decisions and enforce them when necessary.
Average Monthly Consumption	The average amount of drugs or medical consumables that is dispensed to users each month
Balanced-score card	A model that enables an organization to translate its mission and vision into specific strategic objectives across the four perspectives: (1) the financial perspective; (2) the customer service perspective; (3) the internal business process; and (4) the growth and learning perspective.
Behaviour	The total reaction of an individual (or group) which can be observed. Thought and understanding are types of internal behaviour that can be observed directly but can be concluded from observing other behaviour.
Benchmarking	**(1)** Is a process for finding, adapting and applying best practices. One of the important ideas to keep in mind is that benchmarking does not mean copying someone else's project exactly, but rather seeking out aspects of a successful process that could improve your own work.
	(2) The continuous process of measuring products, services, and practices against the toughest competitors or those companies recognised as industry leaders.
Birth spacing	In Cambodia birth spacing is understood as the practice or method to delay births; i.e. extend the interval between births.
Brainstorming	A group decision making technique designed to generate a large number of creative ideas in a short-time through a dynamic but non-judgemental process.
Budget	A detailed estimate of the cost of a program during a specific period. The amount of funds at the disposal of a program.
Budgeting	Budgeting is a form of planning; the formulation of plan for a given future period in numerical terms.
Case Fatality Rate	The proportion who die, of the number of persons diagnosed as having a specific disease.
Catchment Area	The geographic area surrounding one or more health facilities. It refers to the population residing in that area, which includes the program's target population

Cause and effect	Cause and effect (or Ishikawa or Fishbone diagram) is a graphical presentation of exploring all factors that may influence or cause a given outcome.
Cash budget	A statement on projects to show how the hospital's cash balance position will change between certain points in time.
Census	A count of all numbers of a population.
Certification	Certification of specific standards, qualifications and requirement can be performed by independent organisations, develop to be responsible for maintaining standards. Quality awards are issued organisations that fulfil the standards of the respective quality management modules
Check-list	A list of items or descriptions of actions to be looked at, one at a time, to ensure that no item or action is overlooked.
Check-sheet	A simple form which can be used to calculate the occurrence of a certain problem or condition observed.
Client Focus	The realization that the most important person in the health system is the person seeking care.
Clinical indicator	Quantitative measures to indicate clinical processes and outcomes. Clinical indicators do not directly measure level of quality of clinical services, but they serve as flags or early warning system to potential problems requiring improvements.
Clinical audit	Systematic critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome and quality of life for the patient, against agreed standards with the aim of identifying areas for improvement in quality of care.
Clinical governance	A framework through which organizations are accountable for continuously improving the quality of their services, and safeguarding high standards of care by creating an environment in which clinical care will flourish
Clinical information system	A decision support system aimed to provide information that enables the users to make better clinical decisions based on evidence.
Clinical pathway	Clinical pathway or critical pathway is structured care plans which detail essential steps in the care of patients with a specific clinical problem and

describe the expected progress of the patients. Integrated care pathways are multidisciplinary care plans.

Clinical risk management

One of a number of organizational systems or processes aimed at improving the quality of healthcare, which is primarily concerned with creating and maintaining safe systems of care. The processes consist of identifying, analysing and controlling risk.

Communication

(1)- The transmission of meaning from one individual or group, by any means, to another individual or group.

(2)- The process of transferring information or skills to other people. For communication to take place, a message must be sent by one person and received by the other. Communication is not just a matter of speaking or writing. It also involves listening to and accepting other people's opinions and beliefs. Skills in communication are very important in health care.

Community

A group of peoples having a common organisation, interests or living in the same place under the same law.

Complementary Package of Activities

A package of services for delivery at referral hospitals, complementary to the package for primary care services, the minimum package of activities (MPA) at health centre level. The CPA has different levels of care. These levels are termed CPA1, CPA2 and CPA3.

Compliance

Compliance refers to obedience and suggests a power relation between patient and provider. Favouring factors are: information, social support, provider-client relation (satisfaction with organisational aspects – accessibility) and with rational aspects (acceptability based on the quality of communication).

Comprehensive Care (or health care)

Care which considers a person as a whole, i.e. taking into account his individual concerns and his situation within the community. It implies a relationship of empathy between health care staff and the individual.

Computerized Physician Order Entry

Refers to a computer-based system of ordering medications and other tests. Physicians (or other providers) directly enter orders into a computer

	system that can have varying levels of sophistication. Basic CPOE ensures standardized, legible, complete orders, and thus primarily reduces errors due to poor handwriting and ambiguous abbreviations.
Conflict	A social situation in which there are perceived incompatibilities in goals or vales between two (or more) parties, attempts by the parties to control one another, and antagonictic feelings towards each other
Conflict management	Refers to the modes used by either or both parties to cope with a conflict
Control-chart	Similar to a run-chart but with additional lines (upper and lower control limits) indicating whether a process is under control or not.
Crew Resource Management	Encompasses a range of approaches to training groups to function as teams, rather than as collections of individuals. Originally developed in aviation, crew resource management emphasizes the role of human factors as well as the impact of different management styles and organizational cultures in high-stress, high-risk environments.
Confidential inquiry	Systematic multidisciplinary anonymous investigations of all (or a representative sample of) maternal deaths occuring at an area, regional (state) or national level.
Constraint	A lack of some resources affecting the operation of a program and preventing the achievement of one of its objectives.
Continuity of Health Care	The feature of cares which consists of taking responsibility for a patient from the beginning of an episode of illness or risk until his complete rehabilitation.
Continuous quality improvement	The process required by any health care organization to manage, achieve and sustain quality, given the appropriate inputs of available high quality standard and a positive atmosphere.
Control	**(1)**- Watching the activities and results of a program to make sure it is achieving its intended results.
	(2)- A set of actions taken up with the purpose of checking whether a program has achieved its objectives.

Coordination	The process of bringing the activities of different persons in the same or related programs into relation with one another in such a ways that their common goal(s) is efficiently achieved.
Cost	The value of a good or service, which is conceptually defined as the value that could be gained by using the resource in different way. For example, the cost of drugs could be seen as the value of using the resources to purchase some other commodity or service.
Cost Analysis	The examination of expenditures to determine how resources have been spent.
Cost Benefit (Analysis)	**(1)-** A comparison of the (present and future) advantages and benefits of an intervention with its total costs both expressed in monetary terms.
	(2)- It is useful to answer the question: "Do the benefits outweigh the total costs.
Coverage	**(1)-** The degree of use of the health service by the population, expressed by the ratio of the number of people provided with a given service in relation to the total number of people to be served in the area. Health service coverage expresses the extent of interaction between the service and the people for whom it is intended.
	(2)- The percent of a target group that has received a service or is protected from a disease or health problem.
Criteria	Standard according to which something is judged or a decision is made.
Critical incident technique	An interviewing technique with open-ended questions which elicits what patients and other users perceive as important during their experience of services.
Crude Death Rate	The total number of deaths divided by the total population, usually multiplied by 1,000 so that the result can be expressed as death per 1,000 population.
Curriculum	The written description of what happens during a course. It describes the objectives of the course, the teaching methods, the amount of time allocated to each part of the course, and the methods to be used to assess the students. The word curriculum

	is also used to describe what actually happens during the course (which may not be the same as the written curriculum).
Data	Elements of information usually unprocessed.
Death Rate	The proportion of deaths that occur in a population of specified size during a specified period of time. The population size and the period of time may vary, as appropriate.
Decentralisation	Is about devolving central government authority or systems to other levels. Decentralisation requires a number of preconditions including sufficient local administrative and managerial capacity as well as financial decentralisation. Monitoring is also important as is striking a balance between tight control and the independence needed to motivate providers.
Delegation (of authority)	The action of a person in entrusting authority for a specified purpose, to another person
Demand	Behaviour which expresses suffering and through which relief for that suffering is sought; i.e. the total quantum of services the population seeking to obtain.
Disease Surveillance	The collection of information about cases of diseases and the use of that information to evaluate the effectiveness of preventive activities to correct any problems which hinder disease-reduction objectives from being met.
District Health System	The district health system is a self-contained segment of the national health system that comprises a defined population living within a defined administrative and geographical area, either rural or urban and includes all institutions and sectors whose activities contribute to improved health.
Domestic violence	Domestic violence, like any other type of violence is linked to the expression of power and includes: partner abuse; violence including sexual harassment against the partner and / or children and other dependents; mental cruelty and torture and denial of choice to the victim.
Effectiveness	**(1)**- Is the impact on the intended target group for the activity.

(2)- A comparison of results with objectives; i.e. the extent to which pre-established objectives are achieved as a result of health activities.

(3)- The degree to which the desired objectives (outcomes) are achieved. Example, if a program's objective is to reach 10,000 women, it would be 90 % effective if it reached 9,000 women.

Efficacy	The quality of an action to achieve an affect in line with the expected effect, i.e. with the goal.
Efficiency	**(1)**- Efficiency compared outcomes of activities with the overall cost in both financial terms, and in terms of human and other resources invested.
	(2)- A comparison of results with costs; i.e. the in resources necessary to achieve the objectives.
	(3)-The degree to which desired outcomes are achieved without wasting resources. For example, in two programs that used the same amount of resources, program A, which screens 10 mothers / day, is more efficient than program B, which screens 5 mothers / day.
Empathy	The ability to understand, in the process of dialogue with the individual and / or the population, the suffering that they undergo; i.e. the ability to perceive the demand from a person or a group.
Endemic	The constant presence of a disease or infectious agent within a given geographical area.
Epidemic	The occurrence in the community or region of more cases of a disease than usually occur in a specified period of time.
Epidemiology	**(1)**- Epidemiology is the study of distribution and determinants of health related states or events in specified populations, and the application of this study to control health problems.
Equipment	Equipment refers to the more technical instruments and utensils used to perform activities.
Equity	**(1)**- Equity can be defined in very general terms, as an appreciation of what collectively is to be distributed equally between individuals or groups.
	(2)- Equity assesses fairness in the system, that all people are treated equally, regardless of

gender, ethnic origin, or whether they are rich or poor.

Equity Fund	A fund to pay for health services for the poor in order to promote access and lower price barriers to priority health services; the fund may be financed through public and/ or external resources.
Error	An error is a failure to carry out a planned action as intended or application of an incorrect plan. Errors may manifest by doing the wrong thing (commission) or by failing to do the right thing (omission), at either the planning or execution - phase.
Evaluation	**(1)**- A value judgment based on the measurement and assessment of the results of a service or program in relation to its objectives. Its specific elements are relevancy, effectiveness, efficiency, efficacy and equity.
	(2)-Evaluation is an attributing value to an intervention by gathering reliable and valid information about it in a systematic way, and by making comparisons for the purpose of making informed decisions or understanding casual mechanisms or general purposes.
External Assessment (audit)	External Assessment invites an in-depth assessment and evaluation of efficiency and effectiveness of the structure and process of an organisation by independent, especially qualified experts.
Exemption	Official permission not to pay for services that one would normally pay for.
Facilitator	A person who makes things easier. For example, a teacher should be a facilitator for learning i.e., the teacher should make it easier for students to learn.
Facility	The buildings available for a program or activity.
Facility-based death review	A qualitative, in-depth investigation of the causes of and circumstances surrounding deaths occurring at health facilities. Deaths are initially identified at the facility level, but such reviews are also concerned with identifying the combination of factors at the facility and in the community that contributed to the death, and which ones were avoidable.
Failure Mode and Effect Analysis	Error analysis may involve retrospective investigations (as in Root Cause Analysis) or prospective attempts to predict "error modes". Different frameworks exist for predicting possible errors. One commonly

used approach is failure mode and effect analysis (FMEA) in which the likelihood of a particular process failure is combined with an estimate of the relative impact of that error to produce a criticality index. By combining the probability of failure with the consequences of failure, this index allows for the prioritization of specific processes as quality improvement targets.

Feedback	The process of telling people how well they are doing. For example, teachers give feedback to students whenever they comment on the quality of the student's work. Ideally, the teacher should point out how well the work has been done, any errors or faults, and how the quality could be improved.
Filing system	Is an arrangement by which different types of papers, computer documents or specialized items are placed in separate files so that they can be found again rapidly. A good filing system should have the following qualities. It must be inclusive; simple and retrievable (see chapter HMIS).
First Line Health Service	The level of first contact of the population with the health service, where comprehensive, continuous and integrated care is provided by the health service at the periphery.
First Expiry/ First Out	A method of managing commodities in a storage facility to ensure that the oldest stock is used before newer stock.
Flow-chart	A graphic sequence of all major and/or minor steps for a specific process.
Force-field analysis	A method for understanding competing forces (promoting and inhibiting forces) that increase or decrease the likelihood of successfully implementing change. The purpose is to provide a framework for strengthening the driving forces and limiting the barriers and to facilitate improvement opportunities.
Function	A set of activities directed towards a common goal. The health service has four functions:

(1)- The preservation of health (curative activities, preventive activities and surveillance)

(2)- The promotion of health (educational activities, participation in social development)

(3)- A management function (resources, supervision, continuous training of staff), and

(4)- An information function (collection data, their analysis and feedback).

Goal	**(1)**- The aim to be achieved, un-quantified and without time limits; a general political or social aspiration.
	(2)- Intended result or achievement of a program or activity based on strategies and plans.
Guidelines	A number of suggestions about how to proceed with a plan or activity.
Guidelines, Standards	The guidelines for OD and other policy instructions from the MoH, standard treatment protocols for the CPA for district hospitals and MPA for health centres, guidelines from National Programs, standard construction plans, standard lists for equipment, and essential drug kits, all provide standards for health care in Cambodia.
Health	WHO definition: "Health is a state of complete, mental and social well being, not merely the absence of disease."
Health Care	Activities aimed at the preservation, restoration or improvement of health.
Health Care Team	- A group of people who provide health care in a community. This may include a midwife, a nurse, a health inspector, a health educator, a nutritionist, a health extension officer, and / or a doctor.
Health Centre (HC)	A health facility, permanent and polyvalent, which is the first point of contact between the population and health service; which provide continuous, integrated and comprehensive care.
Health Information System	A group of people, procedures, methods and perhaps machines and other equipment for the processing of health information.
Health Planning	The process of defining community health problems, identifying needs and resources, establishing priority goals, setting objectives, defining activities, resources and inputs needed in order to reach the set objectives.
Health Policy	Course or general plan of action to be adopted to deal with health problems or to promote health.
Health Problem	**(1)** The sum of individual suffering and their social

consequences for the community, whether the suffering is at the present issue or in the future.

(2)- A departure from accepted norms in the health status of the community, sometimes also as an underlying cause of such problem.

For example	Many people have diarrhoea: is the health problem; The well-water is contaminated:, which makes it the underlying cause
Health Promotion	Fostering of lifestyles and other social, economic, environmental and personal factors conductive to health.
Health Services	A system of institutions, people, technologies, and resources designed to improve the health status of a population. Also the services provided to the population, e.g. curative, preventive, promotive, etc.
Health Status	**(1)**- The state of health of a person or a community. **(2)**- The degree to which the health of a specified population meets accepted criteria.
Health System(s)	A health –care- system comprises all the organisations, institutions and resources that are devoted to producing health actions and outcomes. Health systems are constituted, on the one hand, by a system of care with the aim is to correct health problems, prevent their appearance and conceal their consequences. On the other hand, they are formed by a system whose goal it is to promote the health of populations.
Holistic Approach	A holistic approach is variously described as a unified or multi-sectoral approach. It conceives of health as the essence of productive life and not, in the extreme case, as the result of ever-increasing expenditure on medical cares.
Human resource planning	A process to estimate the quantity of human resources based on location, skills and competence required to provide health services.
Incidence	The number of new cases (or patients or medical events) during a given period in relation to the average population over the same period.

Indicators	Indicators are a measure for checking on progress towards achieving outcomes. They can be quantitative and/ or qualitative, have a time frame and may highlight geographical and/or target groups. Indicators should relate to those aspects of care or organisational/ management issues.
Incentive	Something that encourages a person to take action.
Information	Data processed for a purpose (e.g. decision-making).
Information System	A group of people, procedures, methods and perhaps machines and other equipment, for the collection, processing, storage, and retrieval of information.
Input	Resources (personnel, materials and equipment, information and money)
Integrated Health Service (or Care)	A pattern of health cares in which all types of care (curative, preventive, promotional) are given at the same place.
Issue	The provision of a commodity to a patient.
Institutional development	- Refers to the process and content of change in institutions. The term process covers 'how' change is achieved and the term 'content' refers to 'what' is to be achieved. 'How' concerns change management or organisation development e.g. how need for change is identified and accepted; how change programmes are designed and agreed, and how implementation is organised. 'What' relates to the changes that are to be made, e.g. redefining objectives **of new human resource policies.**
Inventory management	An activity that controls the organization inventory so the purchasing process could be done in time.
Job Description	A description of the work that a particular category of health worker is expected to do. It usually consists of a list of the tasks to be done, such as " measure blood pressure " or " select sites for wells ". It may also describe the conditions under which the work will be done.
Kit	Kit is the package of drugs and medical supplies, which is delivered to health facilities that are functioning at a basic level without reliable data. Kit cannot be modified according to real needs, stock reports or variation in activity but is based on a calculation of the average health centre or health posts workloads.

Leadership	Leadership is the ability of a leader to recognize the time and requirement to make a change, to identify change direction, to communicate the change strategy to people who are in the organization-especially those supporting the change-, and empower them to make a change and to facilitate the effort of attaining the target of change
Learning objective	What the learner should be able to do at the end of a period of instruction that he/she could not do before.
Limitation	A deficiency of a necessary resource (personnel, materials, money)
Live births	The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after separation breathes or shows other evidence of life, such as beating of the hearth, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered live born.
Logistics	The science of procuring, maintaining and transporting supplies.
Management	**(1)** The activities necessary for the preparation of plans, the implementation of activities and the evaluation of the results of a program. **(2)** Planning, organizing, directing and controlling. **(3)** The art and science of getting things done through people.
Market segmentation	An identification of potential customer which has common characteristics.
Master Plan	Master Plan is an overall plan where each stakeholder commits him/her selves and their resources to meeting the agreed objectives.
Maternal death	The death of a woman while pregnant within 42 days of termination of the pregnancy, irrespective of the duration or the site of the pregnancy, from any causes related or aggravated by the pregnancy or its management, but not from accidental or incidental causes.
Microsystems in health care	A small group of people who work together on a regular basis to provide care to discrete subpopulations of patients.

Minimum Package of Activities	A package of preventive and curative services at primary care/ health centre level designed to address priority health problems.
Mission statement	The mission statement of the MoH provides a sense of purpose and reflects the Constitution and Degrees of the Royal Government of Cambodia.
Monitoring	**(1)** It is the process of observing, measuring and recording the way activities are being implemented. Measuring leads to control. **(2)** Checking on a regular basis to ensure that assigned logistics are carried out.
Months of Stock	A measurement of stock quantity that indicates the number of months a commodity will be available based on the present consumption rate.
Motivation	- **(1)** What causes a person to act in a particular way. **(2)** Interest or drive which causes a person to behave in a certain way. For example, a student with strong motivation will tend to work hard and learn quickly.
Near miss	An event or situation that did not produce patient injury, but only because of chance.
Needs	An assessment made by health care professionals, on the current status of medical science, the manpower and services necessary to provide an optimal level of health care in a given society, taking into account its resources.
Norms	A set of scores that describes the performance of a specific group of pupils, usually a national sample at a particular grade level, on a task or test. These scores are used to interpret scores of other pupils who perform the same task or take the same test.
Objectives	The output and / or effect that a program hopes to achieve.
Obstacle	A difficulty, other than limitation of resources, affecting the execution of a program and preventing the achievement of its objectives.
Operational Plan	A subset of strategic work plan. It describes short-term ways of achieving milestones and explains how, or what portion of, a strategic plan will be put into operation during a given operational period.

Opportunity cost	Values predetermined by using a resource in a particular way instead of in its next best alternative way.
Organizational chart	Is a chart showing the organisational structure of for example a hospital; with the different levels of responsibility, information flow
Organizational culture	The implicit, invisible, intrinsic and informal consciousness of the organization that guides the behavior of individual and shapes itself out of their behaviour.
Outcomes	**(1)** Outcomes are the real or visible effects of decision making and practice. They should relate to crude rates of adverse events in the population (these give a good indication of the size of the health/ disease problem) or when qualitative relate to issues that are system wide
	2) Results of program, including outputs, effects and impacts.
Output	The result of an activity. In a factory, the output is a product; in health work, the output is a service or health status.
Patient safety	Freedom from accidental or preventable injuries produced by medical care
Patient safeaty indicators	Quality indicators that specifically focus on patient safety
Pattern of disease occurrence	Morbidity, disability, and mortality
Peer	A person who is of the same ability or standing. For example, a student's peers are the other students on the course.
Peer Review	Is the process of evaluation by colleagues with the same or similar qualification or experience
Percentage	A proportion multiplied by 100. For example, 3,500 children immunized out of 5,000 x 100 (3,250 / 5,000) * 100 = 65%.
Perception	The population's view of a health problem, an action proposed by the health service.
Performance	The actual output and quality of work performed
Physical asset management	Includes the management and maintenance of all physical assets like medical equipment, office and support equipment, facilities or buildings, grounds,

electricity and water supply, transportation means, management of waste and hygiene procedures.

Physical Inventory   The process of counting by hand the total number of each commodity in your store at any given time.

Plan   **(1)** A statement of goals and objectives and of the courses of action and resources necessary to achieve them.

(2) A statement of objectives, of the actions to be taken and the resources required achieving them

Planning   Planning is a method of trying to ensure that the resources available now and in the future are used in the most efficient way to obtain explicit objectives

Plan-Do-Study-Act   Commonly referred to as PDSA (or PDCA, for Plan-Do-Check-Act), refers to the cycle of activities advocated for achieving process of system improvement. The PDSA cycle represents one of the cornerstones of continuous quality improvement

- **Plan** : setting objectives, planning of activities and tasks

- **Do** : implementation of the planned action and documentation of the process

- **Study** : documentation of results from the test cycle and making observations

- **Act** : identification of lessons learnt from the study phase and making decisions continuation of the next test cycles

Plant   Plant refers to buildings and major infrastructure of the project.

Positioning   The act of designing the organization's image and value offer so that the segment's customer understand and appreciate what the organization stands for in relation with its competitors.

Prenatal Care (or Antenatal Care)   Care of a pregnant woman and her baby throughout pregnancy, with the goal of ensuring the good health of both at delivery.

Prevalence   The number of cases (or patients or medical events), both new and old, in a given population, at one moment in time.

Primary Health Care (PHC)   - PHC is essential health care based on practical, scientifically sound and socially acceptable methods

and technology, made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development, in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system, bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.

Primary Prevention Primary prevention is the preventing of the disease in an otherwise healthy person through techniques such as immunization.

Priority **(1)** A choice based on well-defined value criteria – importance, vulnerability, perception and acceptability.

(2) The order of importance.

Private sector The part of economy of a country that is not under the direct control of the government. There are number of different players in the private sector in Cambodia. These can be summarized as: private-for-profit, private- not- for profit, and informal sector.

Problem A present unsatisfactory state that is difficult to change to a desired future state.

Procurement Management Is the process of evaluation of technology before it is purchased thus avoiding costly errors.

Programme **(1)**- A set of project activities and services. **(2)** - A set of coordinated activities and resources designed to achieve one or more well-defined objectives. **(3)** - A set of interrelated activities, in time sequence, and a statement of personnel and other resources required, directed towards achieving a stated goal or objective.

Project Defined resources and time, based on an objective. The basic components of a project are a couple of things you do to achieve an objective

Proportion	A special type of ratio expressing a relationship between a part and the whole. For example, 3,250 children immunized out of 5,000 (3,250 / 5,000) = 6.5.
Public sector	The public sector refers to services funded and managed by or with national government systems.
Qualitative data	Qualitative data collection contains of three kinds of data collection: **(1)** in-depth, open ended interviews **(2)** direct observation; and (3) written documents. The data from interview consist of direct quotations from people about their experiences, opinions, feelings and knowledge. The data from observations consists of detailed descriptions or people's activities, behaviours, actions and the full range of interpersonal interactions and organisational processes. Document analysis yield excerpts, surveys, reports, detailed passages of written documents ea
Quality	**(1)** The degree to which something is excellent; standard of goodness, materials of good/ poor quality; the quality of services here has improved a lot; high quality goods, a high standard of excellence. Something typical of a person or thing, characteristics: sympathy is the best quality. She shows the quality of relationship. Ideas about quality are always subjective, abstract, and neutral (you need to use it with adjective sometimes to make clearer sense, e.g. good, medium, bad, etc.). There is no single definition of it. To understand it better we need: (a) to link it to a topic; (b) to have standards, norms, and guidelines. **(2)** The totality of a product's or service's characteristics that bears on its ability to satisfy customers' desires.
Quality Assurance	Is a general term for actions and systems for monitoring and improving quality. It involves measuring and evaluating quality, but also covers other activities to prevent poor quality and ensure high quality.
Quality Circle	Small groups of employees who meet regularly to identify, analyse, and solve a company's problem

(QC)	A group of 6 to 12 volunteers employees who meet regularly to discuss and solve problems that affect their common works activities.
Quality improvement	Measure quality and improve. Generally, results from more perfect conformance to product specifications and/or their improvement so that specification more perfectly meet customers' desires, including improvements to productions processes that, for example, result in lower costs and, hence, lower product prices. In health care, results from more perfect conformance to practice policies that are known or assumed to produce maximum health status improvement within patient's preferences and society' s resources. Alternatively, results from refashioning those policies, including the introduction of new interventions or technologies that are known or assumed to produce greater health status improvement than previous policies, and/or changes to health care processes that reduce the cost of care, increase patient satisfaction with, or perfect value trade-offs relevant to the implementation of existing or refashioned practice policies and/or the delivery of care.
Quality Improvement Projects	**-** Special improvement projects are initiated to improve particular quality aspects, which have been identified as a problem.
Quality Management	**(1)** Is an approach that promotes continuous improvement in the performance on an organisation. Or in short it means, "Doing the right thing right, at the right time now, and doing it better tomorrow". Quality Management means improving efficient use of resources through controlling financial and material losses to the project or program.
	(2) QM is the degree of excellence of a service or a system in meeting the health needs of those most in need at eh lowest cost, and within limits, directives and/ or regulations. This means looking at issues including equity, accessibility, effectiveness, efficiency, appropriateness and responsiveness. Baselines for quality include: setting national and local level standards, clinical audits, legal rights and in many countries a patients' charter, patient ombudsman, and a tribunal for patient's right comprised of ordinary citizens.

Quality Standard	The quality standard of the service is the accepted professional level of care determined for that service.
Quota	Quota is a adaptable system in which the facility to be supplied places its own order in the district pharmacy or CMS. It expresses the maximum order that can be placed for the supply period of the facility considered.
Rank-ordering	A group decision making technique to show individual and team rankings of ideas in order to determine priorities from all the ideas generated.
Rate	A measure of frequency of occurrence of an event, such cases per month.
Ratio	Two numbers related to each other in a fraction or decimal, such as the number of cases of measles per 1,000 children. Any fraction, quotient, proportion, or percentage is a ratio.
Register	- A written or printed record containing regular entries of events or other items, such as name, address, births, deaths, symptoms, treatments given, and so forth. Typical hospital registers are registers for admittance, OPD register, death register, disease related registers, ward or department related registers, attendance register etc.
Regulation	A rule, ordinance or law by which conduct is ensured at established standards.
Relevancy	The appropriateness of an action in relation to a problem defined by an objective situation; i.e. the evaluation of decision.
Reliability	A measure of the accuracy and consistency.
Reporting	The process of transmitting information, usually by submitting a document, form or report on regular (daily, weekly, monthly quarterly or annual) basis)
Resource	The material, financial, human and technical means which make it possible to carry out a program and to achieve its objectives.
Responsibility	A task or duty for which one is liable to be called to account.
Risk	In the context of epidemiology: the change/ proportion of persons that are susceptible or contacting a certain disease or illness

Risk Factor	A characteristic of an individual or group that is associated with an increased chance of contracting a disease, having a health problem, or dying
Role	The behaviour expected from someone in a particular status.
Root Cause Analysis	A structured process for identifying the causal or contributing factors underlying adverse events or other critical incidents. The key advantage of root cause analysis (RCA) over traditional clinical case reviews is that it follows a pre-defined protocol for identifying specific contributing factors in various causal categories rather than attributing the incident to the first error one finds or to preconceived notions investigators might have about the case.
Run Charts	- A type of statistical process control or quality control graph in which some observation is plotted over time to see if there are runs of points above or below a centre line, usually representing the average or median.
Safety Culture	Safety culture and culture of safety are frequently encountered terms referring to a commitment to safety that permeates all levels of an organization, from frontline personnel to executive management.
Sample	Cluster Sample: A sample of a population that is divided into a specified number of groups. The standard cluster sample consists of 30 clusters from which 7 or more respondents are selected for interview.
Random Sample	Selection of respondents in such a way that every member of the population being studied has an equal chance of being selected.
Sampling Interval	- In cluster sampling, this is the interval between one cluster and the next. The sampling interval is determined by dividing the population of the area under study by the number of cluster required for the survey. For example, if the population of the study area is 45,000 and the total number of clusters needed is 30, then the sampling interval is 1,500 (45,000 / 30 = 1,500).
Secondary Prevention	Secondary prevention as a category of service has its major effect at the diagnostic stage, such as in the case of early detection of cervical cancer, and provides for early prevention before the condition reaches a critical phase.

Sector-wide management	Refers to formulating policy and managing all agencies and organisations, both public and private, with a common strategy and mutually agreed management arrangements.
Self-actualisation	A state in which an individual has realized his or her fullest potential by developing all of his or her capacities to the greatest extent possible.
Self-assessment	- **(1)** Self-assessment requires comprehensive, systematic, and regular review of an organisation's activities and results compared with a model of excellence. It develops manager's sense of judgement and objectivity.
	(2) The process of testing and judging one's own performance. For example, a student who attempts some problems, then looks up the answers to see how well he or she has done is using self-assessment.
Self-esteem -	Confidence and satisfaction in one-self.
Shelf Life	The length of a time a product may be stored under ideal conditions without affecting the usability, safety, purity or potency of the item.
Situation Analysis	The process of finding out exactly what a health professionals should do in their work. This leads to a list of all tasks.
Skill	- The ability to perform a task through the application of knowledge and experience. There are different kinds of skills. For example: cognitive skills: are the skills of thinking such as making decisions or reaching a diagnosis; Psychomotor skills are skills of coordinating the mind and body, example, stitching a wound is a psychomotor skill – deciding whether stitching is appropriate; Communication skills are the skills of talking, explaining, persuading and listening.
Standard	A descriptive statement of the expected conditions, or a written statement that specifies expectations. It expresses what is to be achieved, the level of achievement and the requirements to be met in order to be judged good quality.
Stock on Hand	Stored quantities of usable stock
Stock Out	Refers to a situation in which a storage facility has no stock on hand

Strategy	A general pattern of action with the purpose of achieving well-defined objectives. A strategy can be broken down into a number of the program.
Stunting	- **(1)** The index stunting or height-for-age reflects linear growth achieved pre-and postnatally with its deficits indicating long-term, cumulative effects of inadequate nutrition and health. Children who are below minus to standard deviations (-2SD) from the median of the reference population are considered short for their age, or stunted. Children who are below minus three (-3SD) from the reference population are severely stunted. Stunting of a child's growth may be the result of failure to receive adequate nutrition over a long period or of sustained improper feeding practices, or of the effects of under nutrition in a population over along period and does not vary much with the season of data collection.
	(2) According to the dictionary stunting means: Stopping growth; to stop something growing; "the children's development was stunted by disease".
Strategic management	Comprises measures taken by top managers to analyze the organization environment, to define the opportunities and threats, to analyze organization strengths and weaknesses, and to define the vision, mission and goals of an organization. Strategy consists of three components, i.e. strategy formulation, strategy implementation and strategy evaluation.
Supervision	- **(1)** The process of ensuring that staff has the knowledge and skills required to carry out their responsibility effectively, and providing immediate on-the – job training as needed.
	(2) Ensure that instructions are carried out so as to keep the operations under control. Supervision is concerned with the process of carrying out instructions and not with the results.
	(3) Making sure that staff perform their duties effectively. It means that a supervisor helps and guides the staff for whom he is responsible and trains them as necessary, in such a way that they become more competent in their work.

Supportive Supervision	- Is a continuous assessment done through giving continuous feedback on the person's work comparing actual accomplishment with those set out in the work plan.
Sustainability	**(1)** Sustainability refers to the extent to which services have been developed to be able to be continued into the future with current levels of resources.
Target	- An objective which is time-limited and can be measured. - The targets in the HSSP are those part of the population i.e. under fives, pregnant women, people aged 15–49 years of age (for HIV/AIDS control) or whole populations i.e. in malarial areas or where dengue is prevalent, which when implemented effectively and efficiently the strategic plan will have a major impact upon.
Target Group	Specific group of people designated to receive a health service
Task	Element of activity directed towards the achievement of the objective.
Team	A team is a group of persons who interact, with different competence's working together to achieve common objectives.
Tertiary Prevention	Tertiary prevention occurs largely at the treatment stage, where complications of a disease can be avoided. This is the case where stroke patients are treated with the procedure that minimizes muscular deformities and subsequent problems of rehabilitation.
Time frame	A period of time used or available for something.
Tools	Anything that helps one to do one's job: research tools like questionnaires. The computer is now an indispensable / invaluable tool in many areas of society.
Under-weight	Or weight-for-age is a composite index of height-for–age and weight-for-height. It represents body mass relative to age. Children's whose weight-for-age measures below minus two standard deviation (-2SD) from the median of the reference population are underweight for their age, while those whose measurement are below minus three deviations (-3SD) from the reference population median are severely underweight. Being underweight for one's

age therefore could mean that a child is stunted or wasted or both stunted and wasted. In the absence of wasting, both weight–for–age and height for age reflect the long-term nutrition and health experience of the individual or population.

Utilisation

The extent to which the population makes use of the health services provided. It can be expressed in measurable terms.

Values

Values and principles embody the ideals of the organisation or person and offer a 'moral' or 'ethical' code that guide's decision making to achieve success. They are valuable in communicating the reasons behind decisions should they be questioned.

Verbal autopsy

A community-based death review based on an interview with family members of the deceased or neighbours.

Vital Event

Events of birth, death, migration

Vital registration

Recording and reporting of births and deaths on a routine basis to a central authority by public and private health providers.

Wasting

- **(1)** Wasting or weight-for-height index measures body mass in relation to body length. It describes a recent and severe process that has produced a substantial weight loss usually as a consequence of acute shortage of food or severe disease. Children whose weight for height is below minus two standard deviation (-2SD) from the median of the reference population are too thin for their height, or wasted, while those who measure below minus three standard deviations (-3SD) from the reference population median are severely wasted. Wasting represents the failure to receive adequate nutrition during the period immediately before the survey and usually shows marked seasonal patterns associated with changes in food availability or disease prevalence. It may be the result of a recent episode of illness; particularly diarrhoea, improper feeding practices, or acute food shortage **(2)** Dictionary definition of wasting: The gradual deterioration of an individual with loss of strength and muscle mass; it may be accompanied by loss of appetite, which makes it worse.

Working principals   Moral rules or strong beliefs that are meant to guide the every day work of the entire workforce

Workshop   - A meeting at which a group of people learn together. Often they will meet to discuss and solve a specific problem. Sometimes the workshop is more like a short course in which the participants discuss problems, attempt projects, and learn skills.