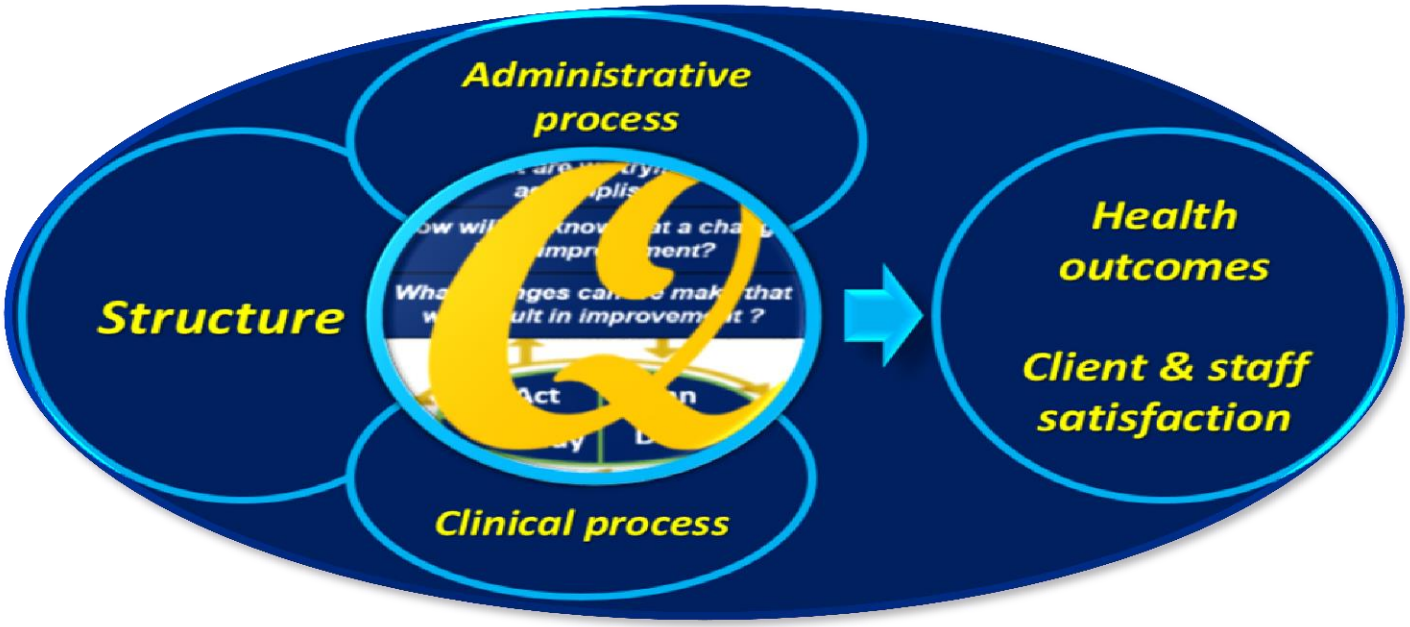
FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF HEALTH

ETHIOPIAN HOSPITAL SERVICES TRANSFORMATION GUIDELINES

Volume 1, September 2016



ETHIOPIAN HOSPITAL MANAGEMENT INITIATIVE

Federal Democratic Republic of Ethiopia

Ministry of Health

ETHIOPIAN HOSPITAL SERVICES TRANSFORMATION GUIDELINES

Ethiopian Hospital Management Initiative

Version 1.0

Forward

The earliest modern efforts to improve the quality of government hospitals throughout Ethiopia began in 2006 with the Ethiopia Hospital Management Initiative (EHMI) which resulted in the creation of the Ethiopian Hospital Reform Implementation Guidelines (EHRIG). EHRIG was built on both the Business Process Reengineering (BPR) and Hospital Blueprint efforts, as well as the Masters in Hospital and Healthcare Administration (MHA) degree programme. Subsequently, the country developed a hospital performance monitoring system based on achievement of key performance indicators (KPI) and the Ethiopia Hospital Alliance for Quality (EHAQ) to spread best practices and promote collaborative learning in government hospitals nationally. EHAQ has focused on patient satisfaction, labour and delivery management, and provides a national framework for continuous quality improvement in hospitals across Ethiopia.

The Ethiopian Hospital Services Transformation Guidelines (EHSTG) build on and expand the Ethiopian Hospital Reform Implementation Guidelines (EHRIG) and are consistent with the Health Sector Transformation Plan (HSTP). The EHSTG, which is consistent with the national focus on quality improvement in health care, contains a common set of guidelines to help hospital Chief Executive Officers(CEOs), managers, and clinicians (care providers) in steering the consistent implementation of these transformational systems and processes in hospitals throughout the country. The EHSTG focused on selected management and clinical functions, including new individual service specific chapters for Emergency Medical, Outpatient and Inpatient Services, Nursing and Midwifery, Maternal, Neonatal and Child Health and Teaching Hospitals' Management. These guidelines also incorporate recent lessons from the operationalization of the EHRIG, as well as, new national initiatives such as the Guidelines for the Management of Federal Hospitals in Ethiopia, Hospital Development Army (HDA), Clean and Safe Hospital (CASH), and Auditable Pharmaceutical Transaction and Service (APTS).

It is expected that the guidelines will continuously evolve as new evidence emerges regarding improved hospital care and practices that are better tailored to particular needs and circumstances of different tiers of public hospitals.

Hon. Minister Kesetebirhan Admasu (MD, MPH)

Minister of Health, Federal Democratic Republic of Ethiopia

Message from Medical Service General Directorate

The implementation of Ethiopian Hospitals Reform Implementation Guidelines (EHRIG) for Ethiopia and health sector provides a unique opportunity of improving the quality of care given by hospitals. I'm delighted to highlight that since the launching of EHRIG in May of 2010, 138 hospitals have implemented the guidelines, which is encouraging.

These new guidelines are quite comprehensive and have undergone a series of consultative workshops and meetings with critical stakeholders, and their inputs have proven to be invaluable. Thank you all!

Moreover, EHSTG is aligned with the Ministry of Health's 5 year "Health Sector Transformation Plan" is expected to significantly contribute to the agenda of the health sector's transformation.

I want to acknowledge all stakeholders who contributed to the development of these guidelines and encourage all leaders of the health delivery system and staff to utilize this important document maximally.

Daniel G/Michael Burssa (MD, MPH)

Director General, Medical Service General Directorate

Federal Ministry of Health

MESSAGE FROM THE DIRECTORATE

Since its launch in 2010, the successful implementation of Ethiopian Hospitals Reform Implementation Guideline has led to marked improvement in the administrative processes of hospitals which helped their systems to be responsive to clients' needs.

Passing through a series of consultative workshops and experts inputs, the Ethiopian Hospital Services Transformation Guidelines (EHSTG) build on and expand the Ethiopian Hospital Reform Implementation Guidelines (EHRIG), incorporating recent lessons from the operationalization of the EHRIG and new national MOH initiatives introduced between 2010 and 2015.

EHSTG guidelines and accompanying operational standards are intended to support the efforts of hospitals in fulfilling a minimum standards for client satisfaction.

Being consistent with the Health Sector Transformation Plan (HSTP) and focuses on selected management and clinical functions of hospital operations and it is believed that hospitals will adopt the EHSTG operational standards comprehensively and bring all services under its umbrella.

In addition, the EHSTG guidelines in accompany with the HSTQ operational manual, are going to be the main tools to transform the administrative and clinical process of hospital functions. Using these tools, the Ministry of Health has prepared to launch nationwide quality improvement initiatives which are going to be operationalized and catalyzed through the EHIAQ platform.

It is, therefore, hoped that all hospitals will take advantage of these guidelines and initiate quick and time bound actions as per the road map placed in the National Quality Strategy.

I must appreciate the efforts and initiatives of all experts and partners involved in the preparation and finalization of these guidelines. I especially acknowledge proactive role and initiative taken by CHAI staff members who were part of all the process of development besides making substantial technical contributions in it.

I also deeply appreciate the commitments of all staffs of Health Service Quality Directorate of the ministry for finalizing these guidelines after a series of consultative meetings and workshops.

Ayele Teshome(MD, OB/GYN)

Director, Health Service Quality Directorate

Federal Ministry of Health

Acknowledgements

The Federal Democratic Republic of Ethiopia Ministry of Health would like to acknowledge the following individuals and their organizations for their participation in technical working groups and contributions in the development of this document.

Hospital Leadership, Management and Governance:

Alemayehu Birhanu	CHAI
Dereje Ayele	MSH/LMG
Tiliku Yeshanew	USAID/HFG/Abt
Meberatu Massebo	USAID/HFG/Abt

Liaison, Referral and Social Services Management

Dr. Ayele Teshome	FMOH
Yakob Seman	St. Peter Hospital
Abebaw Derso	CHAI

Emergency Medical Services Management

Dr Helena Hailu	FMOH
Dr Assefu W/Tsadik	TASH
Dr. Aklilu Azazhi	TASH
Tollosa Dida	St. Paul's HMMC

Outpatient and Inpatient Services Management

Dr. Ayele Teshome	FMOH
Yakob Seman	St. Peter's Hospital
Abebaw Derso	CHAI
Dr. Daniel Mersa	St. Peter's Hospital
Dr. Birhane Redae	St. Paul's Hospital

Medical Records Management

Sem Daniel	FMOH
Wondwossen Shiferaw	FMOH
Antenehn Mekuria	Tulane University
Dr.Girma Tedassa	Tulane University

Nursing and Midwifery Care Services

Sr. Gezahign Denekew	FMOH
Birhane Gebrekidan	AAU
Yoseph Tsige	AAU
Lia Kena'a	Private
Abebaw Derso	CHAI
Tateke Abata	EMA
Aster Dawit	Menilik Nursing Collage

Maternal, Neonatal and Child Health Services

Dr.Ayele Teshome	FMOH
Dr. Munir Kassa	JHPIEGO
Dr. Abebaw Siraw	JHPIEGO
Dr. Dagnew Muluneh	WHO

Laboratory Services

Helen T/Birhan	FMOH
Atsbaha Gebregziabher	EPHI
Habtamu Asrat	EPHI
Ratalegn Geleta	EMLA
Yakob G/geberiabher	National Blood Bank
Zelelem Messele	CHAI
Zelalem Getachew	FMOH
Markos Paulos	FMOH

Pharmacy Services

Regassa Bayissa	FMOH
Ayalew Adinew	USAID/SIAPS
Belete Ayalneh	School of Pharmacy,AAU
Dawit Teshome	School of Pharmacy,AAU
Edmealem Ejigu	USAID/SIAPS
Elias Geremew	USAID/SIAPS
Hailu Tadeg	USAID/SIAPS
Sufyan Abdulber	FMOH
Yaregal Benti	FMOH

Radiological and Imaging Service Management

Esayas Mesele	FMOH
Dr. Ashenafi Abera	St. Paul's Hospital
Dr. Asmeraw Gisila	TASH
Dr. Ayele Teshome	FMOH

Rehabilitative and Palliative Care

Nicola Ayers (PhD)	DFID
Zelalem Getachew	FMOH
Fikre Mekuria	Alert Center

Infection Prevention and Patient Safety

Molla Godif	FMOH
Atkure Defar	EPHI
Dr. Negash Seyoum	JPIEGO
Dr. Abera Reffisa	ICAP

Federal and Teaching Hospitals Management

Dr. Andualem Deneke	TASH
Dr. Abraham Endeshaw	JPIEGO
Dr. Dessalegn Tegabu	FMOH
Markos Paulos	FMOH
Alemayehu Birhanu	CHAI

Medical Equipment Management

Mulugeta Mideksa	CHAI
Dr. Frehiwot Woldehanna	AAU-AAIT. CBM
Bereket Endrias	FMOH
DemeruYeshitila	JPIEGO
Wondafrash MillionFMOH	

Facility Management

Gobena Godana	FMOH
Asnake Wakjira	TASH
Bemnet Gebriel	TASH
Azeb Lemma	FMOH

Human Resource Management

Tesfakros Arefe	FMOH
Serkelem Girma	FMOH

Health Financing and Asset Management

Mebratu Massebo	USAID/HFG/Abt
Tarkegne Abate	USAID/HFG/Abt
Asfaw Bekele	USAID/HFG/Abt

Clinical Governance and Quality Improvement

Dr. Ayele Teshome	FMOH
Habtamu Milkias	FMOH
David Ansu Conteh	CHAI
Dr. Tadele Bogale	Jhpiego
Dr. Abiyou Kifle	IHI

Monitoring and Reporting

Habtamu Milkias	FMOH
David Ansu Conteh	CHAI
Mahlet Asayehagne H/Silasse	FMOH

The ministry is grateful to all above individuals and partners that have participated in the production of these guidelines. Special thanks go to our colleagues at the Clinton Health Access Initiative for their substantial contributions and support throughout the development of these guidelines as well as their dedicated efforts in support of our health reform efforts in so many other capacities.

Additional Contributors

FMOH Led Core Team

Additionally, we recognize the support of the FMOH led Core Team members, whose support was central to the preparation, coordination and facilitation of pre chapter guidelines' development workshop briefs, consultation documents, review of drafts and stakeholder contributions, addressing the editorial team's comments and recommendations and the enrichment of chapters to ensure the two volume documents.

Members of the FMOH Led Core Team are:

Dr. Ayele Teshome	FMOH
Habtamu Milkias	FMOH
Markos Paulos	FMOH
David A. Conteh	CHAI
Abebaw Derso	CHAI
Alemayehu Berhanu	CHAI
Dawit Tatek	Yale University GHLI
Mebratu Massebo	USAID/HFG/Abt

Editorial Team

We would especially like to acknowledge the contribution of the editorial team for their meticulous review of all chapters for font type and size, sentence clarity, consistency and correctness in English language and logic. Their review included a critical review of the chapters to ensure that the standards, implementation guidance, implementation checklist and indicators are aligned and consistent in terms of content covered. Among these editors, we extend special thanks to David Ansu Conteh, Salem Fisseha and Dr. Nicola Ayers for editing the first set of chapters and David Ansu Conteh for the subsequent and final editorial of all chapters with the Yale GHLI Team for the pre-print formatting of the document.

Lastly, the review of the EHRIG and HPMI which led to the development of the EHSTG contained in this document would not have been possible without the inspiration and ongoing FMOH and RHBs' leadership support in ensuring these guidelines are availed for the transformation of public hospital services across Ethiopia. It was only through their leadership and matched financial support that this effort was possible.

Review Workshop Participants

We would also like to extend our deepest gratitude for the valuable input, contribution & comments of the following individuals whose fervent participation & efforts during the final review and revision process of these documents has been elemental.

Dr Ayele Teshome	FMOH/HSQD
Habatamu Milkiyas	FMOH/HSQD
Dr. Robel Wondemagegenehu	FMOH/HSQD
Markos Pawlos	FMOH/HSQD
Yakob Seman	St Peter Specialized Hospital
Mebratu Masebo	Abt Associates
Dr Eyob Gebrehawariat	FMOH/WHO
Dr. Atlibachew Teshome	FMOH/HSQD
Sr Gezashegn Denekew	FMOH/HSQD
Molla Godif	FMOH/HSQD
Sr Aynalem Tadesse	FMOH/HSQD
Abiy Dawit	FMOH/HSQD
Andargachew Abebe	FMOH/HSQD
Bedri Ahemed	FMOH/HSQD
Esayas Mesele	FMOH/HSQD
Mahelet Asayhegn	FMOH/HSQD

Contents

1

Hospital Leadership, Management and Governance

Table of Contents

Abbreviations

CEO	Chief Executive Officer

FMOH	Federal Ministry of Health
HDA	Health Development Army
MOFED	Ministry of Finance and Economic Development
RHB	Regional Health Bureau
SMT	Senior Management Team

Section 1 Introduction

Hospital leadership, management and governance arrangements are essential to ensure effective, efficient and quality hospital services that contribute to the health and wellbeing of the population served. Hospital leaders requirea unique set of skills to both manage their organization and to liaise with external agencies and the local community. Hospital leaders must be able to lead their organizations through change, identifying and solving any challenges that arise.

The Federal Government of Ethiopia through the Health Care Financing Strategy has established the legislative framework for enhanced hospital autonomy with authority decentralized to hospitals in areas such as strategy, planning and budget development. To achieve this, hospitals majority of hospitals have established Governing Boards (GBs) that are responsible to appoint the CEO who in turn leads on all hospital operations and functions. However, established GBs in some hospitals do not meet regularly and the Hospital Development Army (HDA) approach/programme is non-functional in some hospitals.

Good governance for health is a mission-driven and people-centred decision-making process. It also entails:

- setting strategic direction and objectives for the hospital;
- making policies, laws, rules, regulations, or decisions;
- raising and deploying resources to accomplish the hospital's mission, strategic goals, and objectives;
- Overseeing the work of the hospital to achieve its mission.

The hospital governing board and senior management team seeks the best ways to achieve the strategic goals and objectives and enhances the long-term vitality of the hospital so that it can pursue its mission. For this to happen, the leadership team and hospital governing body require a unique set of skills to manage and lead their hospital in this dynamic and rapidly changing environment. To foster good governance for health, the hospital governing boards, senior management teams, and those who lead and manage at all levels must become more knowledgeable and skilful about practices of leadership, management and governance.

This chapter describes the operational standards, implementation modalities, and tools to help you achieve the stated Leadership, Management and Governance standards.

Section 2 Operational Standards for Hospital Leadership, Management and Governance

1. The hospital has a functional governing board with a representative sample of community members that meets regularly to oversee the service delivery of the hospital.

2. The hospital has a functional senior management team (SMT) that meets regularly to manage and execute the overall hospital activities.

3. The hospital has a well-functioning hospital development army.

4. The hospital has an established and implements a resource mobilization plan and ensures resources are utilized effectively and efficiently.

5. There is a system and practice for measuring performance and results in the hospital.

6. The hospital promotes good ethical practice and has an ethics violation reporting and responding mechanism.

7. The hospital has a regular capacity building programme for governing board members and senior managers.

8. The CEO is evaluated every six months, consistent with FMOH or Regional Legislation to ensure he/she is meeting operational and strategic plans as established by the Board and the CEO collectively.

Section 3 Implementation Guidance

3.1 Practices of Leadership, Management and Governance

Leadership, management, and governance are interdependent, reinforce each other, interact in a balanced way and overlap among the roles to serve a purpose and to achieve a desired result. Effective leadership is a prerequisite for effective management and governance. Leaders need to know how to scan, focus, align/mobilise, and inspire workforces. Managers need to know how to plan, organise, implement, and monitor and evaluate. People who govern must know how to cultivate accountability, engage stakeholders, set shared direction, and steward resources. Working together and supporting all aspects of a hospital, these practices lead to improved hospital performance, which, in turn, leads to better health outcomes.

Leadership Practices

To lead well, you need to focus your staff's attention on achieving results that fulfil clients' needs and preferences, as well as respond to key stakeholders' interests. With your full support, the frontline staff that provide health services can learn to identify their own obstacles to service quality, initiate improvements, and serve their clients well. For good leadership, followingleading practices need to be considered:

a. *Scanning:* Scan for up-to-date knowledge about management (to be aware how your behaviour and values affect others), staff, hospital, and the environment.
b. *Focusing*: Focus staff's work on achieving the organisational mission, strategy, and priorities.
c. *Align and mobilising*: Align and mobilise stakeholders' and staff's time and energies as well as the material and financial resources to support organisational goals and priorities.
d. *Inspiring*: Inspire your staff to be committed and to continuously learn how to adapt and do things better.

Management Practices

When managers use good management practices, they make sure that operational plans and reporting structures are clear and reflect organisational priorities. Staff receive feedback on their work through appraisal, supportive supervision and monitoring and evaluation systems that provide timely and reliable information.To manage a hospital well, managers need to continuously pay attention to the health services that the hospital provides to be consistently **high quality** to meet clients' needs.

To help facilitate good management, he following practices need to be considered:

a. *Planning:* Plan how to achieve results by assigning resources, accountabilities, and timelines. Hospitals need to have a strategic plan and annual plan approved by the governing board. The Ethiopian Government, through the Civil Service Reform Programme, requires all public bodies in Ethiopia to plan using the Balanced Scorecard (BSC) approach, a strategic planning and management system designed to help everyone in an organisation understand and work towards a shared vision and strategy.
b. *Organising:* Organise people, structures, systems, and processes to carry out the plan.
c. *Implementation:* Implement activities efficiently, effectively, and responsively to achieve defined results/objectives.
d. *Monitoring:* Monitor and evaluate achievements and results against plans, and continuously update information and use feedback to adjust plans, structures, systems, and processes for future results.

Cultivate Accountability

a. *Enhance personal accountability*. As governing body members are entrusted with resources to serve the common good. Board members need to be accountable personally; by attending meetings and taking assignments that are executed on time and of good quality.

b. *Enhance internal corporate accountability* (accountability within the hospital). Internal transparency increases employee loyalty and collaboration. The hospital board should be able to:
   - Ensure a free flow of information internally within the hospital.
   - Encourage calculated risk-taking, by recognizing effort and courage,even when intended results are not achieved.
   - Provide clear guidance to staff on goals and tasks for which they will be held accountable, without micromanaging the process to accomplish them.

c. *Enhance external corporate accountability of the hospital.*It is hard to have external accountability without having internal transparency and accountability. For external accountability to be effectively established, the governing board need to:
   - Establish mechanisms like hospital-community forum to let the public know the expected standards, goals and targets as well as a mechanism in which those who hold a responsibility (board, SMT and staff) are in some way held accountable for falling below the standards expected or, conversely, rewarded for achieving or exceeding standards.
   - Establish a process in which governance leaders, management, and staff are required to defend their actions, face questions, andexplain themselves to the public and stakeholders – periodic community and hospital partnership forums could also be used.

Involvement- Engage with staff, Community and Stakeholders

a. *Engage Community, Civil Society, and other Stakeholders.* To engage with stakeholders, it is important to build coalitions and networks across all levels of government, community and civil society and with different actors. Actions in many sectors, in addition to the health sector, can impact the determinants of health, and ultimately health.The Governing board and SMT in a hospital should:
   - Build partnerships with ministries and bureaus that play a role in improving the health of the people (e.g., health, labour and social affairs, environment, education, agriculture, trade...).
   - Establish alliances for joint action with other hospitals andnetworks.
   - Establish community-hospital forums that have clear action plans, a reporting mechanism that can be tracked as required.
   - Be inclusive in consultation.Socially disadvantaged groups and individuals are disproportionately affected by lack of access and negative health outcomes; so, it is especially important for governance boards to be proactive in incorporating their voices in governance decision-making and allowing them to influence the governancedecisions.

Responding to the health needs of socially disadvantaged communities is central to the performance goals of the hospital leadership and governing board. To do so, the hospital's SMT and governing board:

- Need to work closely with these communities through district and Kebele level (and their associations/organisations) to have an understanding of their health needs and use a deliberate approach for addressing those needs.
- Make sure that their needs are periodically assessed and addressed in the hospital plans and strategies

- *Engage with staff***.** Staff feel engaged when they have involvement in decision-making. Engaged staff feel valued, respected, and supported. They are engrossed in their work and take pride in what they do.

- *Engage with senior clinicians.*The Board and the SMT should be able work together to create a platform that encourages senior clinicians to contribute to improve services. You can improve engagement with doctors and clinicians in many ways: by mutually discovering a common purpose such as improving outcomes and efficiency, making them partners in improving quality, involving them from the beginning, valuing their time, making it easy for them to do the right thing for patients, identifying and encouraging champions among them.

Setting a Shared Direction

Shared direction comes from agreeing on which 'ideal state' everyone is trying to get to. If there is no agreement on what or where you are moving to, agreeing on approaches for how to get there will be that much more difficult. If you know that you are all moving in the same direction, you will find it easier to gather support for the planning process, assess readiness, and define strategy to achieve this vision. You can then design a shared action plan with measurable goals for reaching it and setup accountabilities to accomplish the plan.

Stewarding Resources

Stewarding resources is raising, mobilising, and allocating resources, and making sure that there sources are ethically and efficiently used for delivering services that are of high quality, affordable, cost-effective, and appropriate to the needs of the population, and that achieve better health for the people. Good stewards protect and wisely use their sources entrusted to them to serve people, as if these resources were their own. They ensure proper resource utilisation and advocate for using resources to maximize the health and well-being of the public. They collect, analyse, and use information and evidence for making decisions on the use of resources.

Hospital board members must: (1) define the scope and nature of the resources required to implement their organisations' strategic plans; (2) raise these needed resources from diverse sources; and (3) cause to have these resources carefully used and expended by managers, clinicians, and health workers. Smart governance requires the careful stewardship of scarcer sources-human, technological, physical, and financial.

Continuous Governance Enhancement

Good governance is not static, it is dynamic and always seeking ways to improve the performance of essential practices described above. Those who govern must make a personal and a collective commitment to continuously enhance the strategies, structures and style of governance practices. Working as Governing board members and members of hospital SMT, to ensure Continuous Governance Enhancement, the following essential strategies should include:

- Governance orientation and training
- Governance assessments and development of improvement plan that should be monitored as required

3.2 Systems and Processes for Effective Leadership, Management and Governance

A. Hospital Development Army (HDA)

The Government of Ethiopia has put the establishment of a functional HDA as a top priority. The HDA is regarded as the key vehicle that would help Ethiopia achieve its ambitious health sector targets.HDA is an initiative to expand best practices on a large scale within a short period of time by fostering networkingamong individuals, units and facilities to reach at the intended standards.

The main goal for the Hospital Development Army, at the hospital level, is to enable the hospital staff to learn from each other, to identify potential gaps in health service delivery and devise the optimum solution, and identify best practices and scale up in the hospital.

The HDA is designed to accomplish the following critical tasks:

1. Identify locally salient obstacles that hinder case teams from delivering quality health services and implementation of hospital reform;
2. Come up with feasible strategies to address these problems;
3. Implement the strategies; and
4. Evaluate their activities.

The HDA does also involve hospital-community and hospital-staff meetings. These large public conferences and hospital – staff forums provide the platform to share prioritised obstacles and strategies.

Building Health Development Army in the hospital needs high level commitment from the hospital board and senior management team.

For successful implementation of Health Development Army, regular monitoring and evaluation at all level is crucial. The three M&E elements; Follow up on report, Inspection/Supervision and Feedback are need to be done in order to build effective army.

B. Healthcare Kaizen

Kaizen can be defined as a set of principles and specific practices for continuous improvement. At a high level, kaizen is a process that, ideally engage everybody in identifying problems or opportunities for improvement and then involves them in identifying, testing and evaluating improvements in a scientific and iterative way. Kaizen is rigorous without being bureaucratic.

Kaizen is built upon the improvement cycle of PDSA or Plan, Do, Study and Adjust (sometimes called PDCA or Plan, Do, Check and Act). In Kaizen PDSA cycle, employees, co-workers and managers:

- Plan: Identify a problem or opportunity, understand the current situation and cause of the problem and brainstorm various actions that can be taken.
- Do: Perform a small test of change aimed at making a quantitative or qualitative improvement in a system.
- Study: Honestly evaluate the effectiveness of the action and use if created any unanticipated results or any side effects.
- Adjust: based on the evaluation, one can choose to adopt the change or adjust it in some way, or the change might be abandoned altogether. With kaizen, participants can go back to the plan stage, to try again, without shame.

The following are key principles of kaizen:

- Continually improve.
- No idea is too small.
- Identify report and solve individual problems.
- Focus change on common sense, low-cost and low-risk improvements, and not major innovations.
- Collect, verify and analyse data to enact change.
- Problems in the process are a major source of quality defects.
- Decreasing variability in the process is vital to improving quality.
- Identify and decrease non-value added steps.
- Every interaction is between a customer and a supplier

- Empower the worker to enact change
- All ideas are addressed and responded to in some way.
- Decrease waste.
- Address the workplace with good housekeeping discipline.

C. Scientific Method of Problem Solving

See the Health Service Transformation in Quality (HSTQ) document for the Scientific Method of Problem Solvingapproach that integrates the strategic function of leadership, involving goal and objective setting with the subsequent organizational action required to achieve the set objectives.

3.3 Governing Board

A well-functioning Governing Board, that includes representatives from the hospital's community, can have a significant impact on the quality and efficiency of the hospital service and its daily performance.

The establishment of a Governing Board builds in two essential characteristics for good hospitals:

- Autonomy to do what is necessary to provide good care and
- Accountability to those served for the results of that care.

Governing Boards must be committed to creating and maintaining a strong bond between the hospital and the community it serves and maintaining a good working relationship with higher government authorities.

3.2.1 Responsibilities of the Governing Board

The following sections set out the basic principles related to the establishment, responsibilities and operating mechanisms of Governing Boards. More detailed information on the specific powers and duties of Governing Boards within each region and Federal hospitals are described in the Health Service Delivery and Administration Proclamations, Regulations and Directives of each Region and Guidelines for Management of Federal hospitals.

Specific responsibilities of the Governing Board include:

A) Determine the organisation's mission, vision and values

It is the Governing Board's responsibility to create and regularly review a statement of vision that articulates the organisation's goals and values, but should be in line with the stated mission.

A Mission statement can be defined as ‘purpose, reason for being’ or simply ‘who we are and what we do’.

A Vision statement can be defined as ‘an image of the future we seek to create’.

All strategies, plans and policies of the Hospital should be in accordance with the mission, vision and values set by the Governing Board.

B) Establish corporate policies

The Governing Board should ensure that corporate policies (such as policies for staff recruitment and retention, for income generation and expenditure, for quality assurance etc.) are available to govern the operations of the facility.

C) Ensure effective organisational planning

Governing Boards must actively participate in an overall organisational planning process. This includes examining and approving the strategic and annual plans of the hospital, and ensuring that such plans are in accordance with the mission, vision and values of the hospital. Furthermore, that they are aligned with local, regional and national health sector priorities and targets.

D) Direct and supervise the overall activities of the hospital

Governing Boards must monitor progress towards the goals and targets of the strategic and annual plans. If the hospital is not on track to meet its stated plans, the Governing Board must identify the reasons why, and, should assist the CEO and hospital management team to identify and implement solutions.

E) Provide proper financial oversight

The Governing Board must review and approve the hospital’s annual budget, and implement proper financial controls to follow up on its utilisation and ensure that the hospital operates within its budget. This includes implementation of revenue retention and utilisation as per the Federal or Regional financial rules and regulations. Additional responsibilities include ensuring that internal and external financial audits are carried out as required by legislation. The Governing Board should regularly review audit reports and ensure that action is taken on any recommendations made.

F) Ensure adequate resources

The Governing Board must identify what constitutes adequate resources for the organisation and ensure the effective means to access these resources. Where necessary, the Board and staff must devise strategies and the means to improve revenues and diversify the source. Such mechanisms

could include fee revision, outsourcing of activities or the establishment of private wings in accordance with the Regional financial rules and regulations.

G) Oversee fee waiver and exemption systems

Governing Boards must ensure the provision of health services to fee waived patients without discrimination, and must ensure the provision of exempted services as described in the Regional or Federal financial rules and regulations. Boards must ensure the reimbursement of fee waiver expenses from the appropriate Fee Waiver Certificate issuing authorities.

H) Oversee quality management activities

The Governing Board must ensure that hospital services are provided to the highest possible standard. The Board should ensure that systems are in place for monitoring and evaluating the quality and outcome of patient care, customer services and use of resources. The Board should ensure there are appropriate mechanisms and activities to minimise risk, to identify and correct problems, and to identify opportunities to improve patient care and services.

I) Oversee the implementation of national level hospital initiatives

The Governing Board must closely monitor the implementation of national level hospital initiatives. Following the designing of these hospital initiatives by the FMOH and their approval by the RHB, the Governing Board of the hospital is held responsible for ensuring the incorporation of these initiatives in the hospital's annual plan, allocation of adequate resources, implementation of the initiative, and monitoring of the activities through regular reports and observation visits.

J) Set strategies to balance the public private partnership

It is the responsibility of the Governing Board to ensure that the public hospital should leverage technical capabilities available only in the private hospitals, and that the private hospitals should not engage themselves in practices that compromise the quality of services in public hospitals. In addition, the Governing Board should oversee the outsourcing of clinical and non-clinical services to the private vendors. This includes ensuring that the bidding process is in line with the government procurement procedure, the parties sign legal contracts as per the guideline, and the contractual services are delivered as per the contract.

K) Select the Chief Executive Officer

Governing Boards must ensure that the most qualified individual is appointed to the position of Chief Executive Officer (CEO), following the processes set out in Federal or Regional Directives. The CEO should be qualified by education and experience appropriate to the position. The authority and duties of the CEO must be defined and documented by the Governing Board or appointing authority.

L) Support, monitor, and assess the performance of the CEO

The Governing Board should ensure that the performance of the CEO is assessed at least annually by the Board or appointing authority. Should the CEO fail to meet the expectations of the Governing Board, his/her employment should be terminated, following the processes described by Federal or Regional Directives.

M) Provide orientation for new Board members and ensure ongoing education for existing members

All Governing Boards should participate in ongoing education to assist members to carry out their role in the hospital. For newly appointed board members, there should be a planned orientation programme that ensures members understand their responsibilities.

N) Review effectiveness of its own performance

The Governing Board should periodically and comprehensively evaluate its own performance, taking into consideration areas such as:

- Regularity of and attendance at Board meetings
- Board vacancy rate (% of Board positions that have been filled)
- Knowledge, skills and awareness of Board members on hospital operations, finance, on key issues affecting the hospital and any national, regional and local health priorities
- Approval of the strategic and annual plans by set deadline
- The relationship between the Governing Board, CEO and hospital Senior Management Team
- The relationship between the hospital and communities served by the hospital
- Engagement with the wider stakeholders such as woreda, zonal and regional health departments and any local health partnerships

O) Ensure legal and ethical integrity and maintain accountability

The Governing Board is responsible for ensuring adherence to legal standards and ethical norms. It ensures that activities of the hospital are carried out with transparency and accountability and that all required reports are submitted to higher authorities (e.g. RHB, BOFED, FMOH, and MOFED) in accordance with government requirements.

P) Ensure community involvement in hospital service planning and delivery

The Governing Board should ensure that mechanisms are established to enhance the involvement of patients and the public in the planning, delivery of hospital services, and monitoring phases and to maintain close consultation with community leadership. The governing board should establish hospital-community forums and conduct them at least every quarter.

Q) Enhance the organisation's public standing

The Governing Board should clearly articulate the hospital's mission, vision, values accomplishments and goals to the public and garner support from the community.

3.2.2 Membership of Governing Board

A strong governing board is comprised of members who:

- act on behalf of the community as a whole;
- are interested and committed to serve as a board member;
- have a variety of expertise as a collective whole, including finance, administration, public health, government bureaucracy, legal and marketing;
- maintain high ethical principles, integrity and competence;
- deliver results while using resources wisely;
- give management the full authority to run the hospital and do not "micro-manage" the hospital leaders;
- commit the time required for meetings, dialogue, etc;
- subscribe to the principles of accountability for themselves and others;
- prioritize the benefits of the hospital rather than personal benefits;
- are participatory in planning, decision-making, and activities; and
- declare any conflicts of interest and excusethemselves from any decisions that have immediate benefit for themselves, their families or their business interests.

A) Appointment of Board Members

Rules and procedures for the appointment of Governing Board members are described within Federal and Regional Proclamations, Regulations and Directives. In general, Specialized, General and District Hospital Board members are nominated by Zonal or Urban Administrations and appointed by the respective RHB, or by the FMOH for Federal hospitals. Boards are comprised of between 5 to 7 members, or as specified in Federal and Regional Directives.

Governing Board members should be residents of the area where the hospital is established. Additional factors to be taken into consideration when appointing board members include:

- Due consideration to gender and professional mix,
- Community representation, and
- Professional efficiency, time and experience that will enable the Board member to contribute to the improvement of the health sector.

B) Tenure of Board membership

The tenure of service of Board members should be between 3-5 years, and Board members may serve a maximum of two terms, as determined by Federal and Regional Directives.

C) Revocation of Board membership

The membership of any Board member should be revoked when:

a) The Board member has no interest to continue membership. In such circumstances the Board member should give one to two months advance notice (as determined by Federal and Regional Directives) in writing to the Board Chairperson and RHB Head or Minister of Health;
b) The Board member changes residence address or leaves the office he/she represented;
c) In the case of people's or employees' representative if the Board member loses the faith of his/her constituency and a request is made by the constituency to replace him/her; or
d) The Board member has failed to fulfil the duties of his/her membership. This includes considerations such as:
    i. Repeated absence from Board meetings without sufficient reason
    ii. Proven corruption such as earning benefits in the health facility other than the legally permitted benefits or other corrupt practice
    iii. Repeated failure to follow up on actions agreed by the Board
    iv. Breach of confidentiality

In such cases, the Board should reach consensus that membership should be revoked and should make this recommendation to the RHB Head or Minister for Health who will reach a final decision on the matter.

If a Board member leaves office during his/her period of tenure the remaining Board members should select one or more possible replacements and nominate the candidate(s) to the RHB or FMOH to make the final appointment.

D) Duties and responsibilities of Board members

Board members have a duty to:

a) Attend ordinary and extraordinary meetings, respecting the time;
b) Accept and implement a decision passed by the majority;
c) Prepare for each meeting by reading agendas, minutes of the previous meeting and other documents distributed for consideration;
d) Follow up on any actions agreed by the Board in a timely manner; and
e) Maintain confidentiality on all matters discussed by the Board.

E) Board accountability

Board members have individual and joint responsibility for the decisions they pass and are responsible individually and jointly for any damage caused to the hospital due to their failure to accomplish the duty entrusted to them. In the event a Board member solely opposes a decision or an agenda for discussion, he/she may explain the reason for his/her unique opposition and make

it noted on the minutes. He/she shall not be responsible for any damage occurred due to this decision or agenda item.

Governing Boards are accountable to their respective RHB or the FMOH and should meet all expectations that the RHB or FMOH places on the Board.

F) Allowance for Board members

Reimbursement of expenses for Board members and allowances for Board duties should be provided as established by Federal and Regional Directives.

3.2.3 Officers of the Governing Board

The Governing Board should appoint three to five Officers, who form the Executive Committee of the Board.

Officers of the Board include:

a) The Chairperson
b) The Vice-Chairperson
c) The Secretary

Additional Officers, such as immediate past Chairperson may be appointed as necessary.

3.2.3.1 Roles of the Chairperson of a Governing Board

The Governing Board should be led by a Chairperson, who is appointed by the RHB or FMOH or University presidents from among the Board members. The main responsibilities of the Chairperson are to:

A) Preside over the Board

The Chairperson should chair Board meetings and direct the overall functioning of the Board. The Chairperson should take the lead in clarifying the goals of the Governing Board. This helps to build a cohesive group and clarify expectations, while focusing the Governing Board's attention to the connection between its own performance and the success of the hospital.

B) Convene and facilitate board meetings and set meeting agendas

The Chairperson should ensure that regular Board meetings take place in compliance with the periods prescribed in Federal or Regional Directives and should convene extraordinary meetings in compliance with these Directives. The Chairperson must ensure that meetings are conducted in a professional manner and are constructive for both the hospital and the individual Governing Board members. The Chairperson therefore must oversee the development of a well thought out agenda and supporting materials. The agenda should be a collaborative effort with the CEO. The Chairperson should expect members to arrive at meetings fully prepared to participate in

Governing Board meetings. It is important that the Chairperson knows how to clarify, summarise and move Governing Board members to a decision, as well as set aside some time at the end of the meeting for feedback on how the meeting went.

C) Manage Governing Board structure

The Chairperson should create, in collaboration with the CEO, a structure that supports the mission and work of the Governing Board. Where appropriate he/she should establish standing committees to undertake specific functions of the Board. The Chairperson should ensure that any such committees are working as they should.

In addition to the above, an effective Chairperson will:

1. Understand the organisation

The Chairperson must have an expert understanding of the hospital's history, mission, current role, finances, programmes and services, and staff. He/she must also be knowledgeable of any external forces that affect the hospital's inner workings, making certain to execute any health policies as required by the appropriate government body.

2. Know his/her own responsibilities and authority as Chairperson

By understanding his/her own responsibilities, the Chairperson serves as a model for other Governing Board members to follow. The Chairperson's real authority and influence rests in how he/she develops and manages relationships with the rest of the Governing Board and staff.

3. Create a safe environment for decision making

The Chairperson should take the lead in establishing the tone for shared decision making by inviting participation, encouraging varying points of view and promoting an open and honest exchange of ideas about issues.

4. Build a working culture

The Chairperson should encourage a participatory working culture that focuses on collective responsibility and accomplishment.

5. Cultivate future leadership

It is essential that the Chairperson is capable of cultivating and nurturing Governing Board members who have expertise and personal qualities that the hospital needs. He/she must be able to prepare Governing Board members for future leadership, which requires encouraging periodic self-assessment in order to highlight Governing Board members' strengths and leadership possibilities.

6. Communicate with the Governing Board through an effective information system

Providing information about hospital operations is an essential responsibility of the Governing Board Chairperson and CEO. Materials for Governing Board and committee meetings should be distributed in advance of the meeting to allow time for review by members. Establishing a

reliable system to distribute information at other times is also important, for regular, interim updates and in the event of unexpected matters that demand Governing Board attention.

7. Maintain a productive relationship with the CEO and the appropriate government body

Maintaining productive relationships with both the CEO of the hospital, plus the appropriate government body, are extremely important. It requires clarity of roles, trust, honesty and frequent communication.

3.2.3.2 Roles of the Vice Chairperson of the Governing Board

The Vice Chairperson is appointed from among Board members and acts on behalf of the Chairperson in the Chairperson's absence.

3.2.3.3 Roles of the Secretary of the Governing Board

The Secretary of the Governing Board is appointed from among Board members. This position could be filled by the hospital CEO. The Secretary is responsible for taking minutes of Board meetings. Minutes should be reviewed and approved by the Chairperson before distribution to Board members.

3.2.4 Procedures of Board meetings

The main purpose of Board meetings is to ensure effective governance of the hospital. This includes developing, debating and approving strategic and annual plans, monitoring implementation, discussing and approving corporate policies and addressing any legal and ethical issues that arise. Board meetings are also an opportunity to provide structured education sessions for Board members on emerging issues concerning the hospital and/or the community it serves.

(NB: General guidance/etiquette to ensure that any type of committee or meetings function effectively are presented in Appendix D.)

A) Frequency of Board meetings

It is recommended that during the first year of establishment the Governing Board meets once every month to become familiar with its own responsibilities, with the hospital and the health sector in general. Thereafter the Board should develop a schedule whereby the Board meets no less than the frequency set out in Federal or Regional Directives. Extra-ordinary meetings may be convened should a matter of particular importance arise. Such meetings will be convened upon the decision of the Chairperson, or if called for by a minimum of one-third of Board members.

B) Agenda items

The agenda should be set jointly by the Board Chairperson and Hospital CEO. All Board members should be invited to nominate agenda items for consideration by the Chairperson and CEO. The agenda and any documents for discussion at the meeting should be distributed to Board members at least one week in advance of the meeting.

The following should be regular standing items on each and every agenda of the Board:

a) Approval of previous meeting minutes;
b) Committee reports;
c) CEO's report – providing an overview of hospital operations, discussion of pressing issues and immediate concerns;
d) Old business – issues unresolved from last meeting;
e) New business – any issues Governing Board members want to raise; and
f) Next steps – plans for taking action on decisions reached by the Board, with the assignment of follow up responsibilities to individuals as appropriate.

C) Decision making

Decisions by the Board should be made by majority vote. In the case of a tie the Chairperson has the deciding vote. Voting may only take place when a full quorum of Board members is present. A vote passed by less than a full quorum is invalid. The criteria for a full quorum vary from Region to Region (from 50% + 1 of Board members to 2/3rd of Board members) and are described in Federal and Regional Directives. The CEO is an ex officio Board member and hence has no vote on the Governing Board.

3.2.5 Governing Board standing committees

The Governing Board should assign standing committees to carry out specific functions of the Board and report on their activities to the full Board. As a minimum the following standing committees should be established:

a) Executive committee
b) Finance committee
c) Audit committee

Other standing committees may be established on a temporary or permanent basis as the need arises (for example a CEO selection committee, strategic planning committee, quality assurance committee or a committee to address an emerging clinical matter).

When selecting members for each committee the following principles should be followed:

a) Committee members should be selected from the current Board members
b) Selection should be transparent and fair, without favouritism of any kind

c) The Governing Board Chairperson should be a member of all committees
d) Each committee should have its own chairperson who will preside over the actions of the committee
e) Hospital staff, representatives of appropriate external bodies (e.g. MOFED or Woreda Health Office) or prominent members of the community with an active interest in the hospital and appropriate professional expertise (e.g. an accountant for the Finance committee) may be appointed as non-voting members to support the functions of the committee

A) Executive Committee

The Executive Committee should be chaired by the Governing Board Chairperson and should be comprised of Officers of the Board and all key Governing Board committee chairpersons. The Committee acts on behalf of the full Governing Board in their absence and is responsible for reporting to the full Governing Board on such actions.

B) Finance Committee

The Finance Committee oversees the hospital's financial planning and ongoing financial operations to ensure the viability of the hospital. This includes monitoring that adequate funds are available for the organization's financial plan, safeguarding hospital assets, and ensuring that the hospital has adequate fiscal policies. Moreover, the Finance Committee must anticipate financial problems by reviewing hospital financial information provided at regular intervals. The Finance Committee should be comprised of selected Governing Board members, the hospital Finance Head and possibly representatives from the Regional or Woreda Bureaus of Finance and Economic Development and business leaders from the local community. Other than those individuals who are members of the hospital Governing Board, all finance committee members have no voting rights.

C) Audit Committee

The Audit Committee should make sure that all required financial audits are conducted and that reports are presented to appropriate bodies. The committee should be chaired by the Treasurer of the Governing Board and comprised of selected Governing Board members, the hospital internal auditor, the Finance Head and possibly representatives from the Regional or Woreda Bureaus of Finance and Economic Development or a respected local accountant with knowledge of bookkeeping and auditing. Other than those individuals who are members of the hospital Governing Board, all audit committee members have no voting rights.

3.4 Chief Executive Officer

3.4.1 Selection and Appointment of the CEO

Each hospital should be managed by a CEO who is appointed by the Governing Board or appointing authority following the processes set out in Federal or Regional Directives.

A qualified CEO should have a diverse set of leadership and management skills, as well as considerable healthcare/hospital experience as either a clinician or management professional. He/she must be capable of working with diverse groups, such as the Governing Board, various community groups, government officials and hospital staff, patients and families. He/she should be able to think strategically to provide vision and direction to the hospital with special attention to professional development. An individual with an entrepreneurial spirit and who is fiscally responsible will be valuable to the organisation. He/she should be a results oriented leader with an eye for understanding how to improve the quality of patient care.

3.4.2 Roles and responsibilities of CEO

The CEO is the highest ranking management officer in the hospital and as such, directs and administers the activities of the Hospital in accordance with instructions and plans developed by the Governing Board. The CEO must ensure that decisions of the Governing Board are implemented effectively and efficiently throughout the hospital and must ensure the efficient planning and utilisation of all hospital resources in order to achieve the organisation's goals. This entails the management of human resources, supplies, revenues, and physical and capital assets based on detailed plans developed for all aspects of the hospital's operations

CEO responsibilities should be described in a job description developed by the board that clarifies the expectations of performance and boundaries of his/her responsibilities. Areas of responsibility include:

A) Governing Board development, communication and relationships

The CEO should work closely with the Governing Board to ensure that they, and any Standing Committees, are assisted and provided with relevant information to enable them to perform their functions effectively and efficiently. The CEO serves as a secretary of the Governing Board. The CEO should inform the board in a timely manner of any issues of concern or risks that affect or may affect the hospital. The CEO should work with the Board to provide or facilitate trainings of Governing Board members to ensure that Board members are adequately skilled for their role.

B) Planning, monitoring and evaluation of hospital operations

The CEO should prepare hospital strategic and annual plans and submit these to the Board and all necessary higher authorities for approval. The CEO is responsible to effectively implement these plans and achieve strategic plan goals. Strategic and annual plans should include all hospital improvement initiatives.

The CEO should submit to the Board regular performance and financial reports of the hospital, showing progress towards the goals of the strategic and annual plans, and in particular highlighting any areas of concern.

The CEO should also ensure that any reporting requirements of higher authorities (such as Woreda, Zonal or Regional Health & Finance Departments) are submitted in a timely manner.

C) Fiscal/ Budgeting

The CEO should prepare and submit the budget of the hospital to the Board for approval. After approval the CEO should maintain the hospital budget within the agreed upon parameters, effecting payments in accordance with the approved budget and plans. In partnership with the Governing Board, the CEO is also responsible for designing various mechanisms to increase hospital revenue such as:

- outsourcing non clinical services to improve the overall quality of care,
- establishing, organizing, and controlling private wing health services, and
- Revenue collection and utilisation procedures.

The CEO should ensure that financial audits are performed in accordance with government requirements and submitted to the Board for approval, and subsequently to the appropriate higher authority in a timely manner.

The CEO should ensure that any recommendations made by internal or external financial audits are acted upon appropriately.

D) Development of hospital management committee and other structures

Each hospital should have an organisation chart that describes the organisation of hospital functions and personnel, including reporting structures. The organisation chart should be developed by the CEO and senior management and approved by the Governing Board.

A skilled CEO finds other capable staff members with whom to share the workload. The CEO may delegate part of his/her powers and duties to the employees of the hospital to the extent necessary for the efficient performance of its activities.

The CEO is responsible to establish an effective Senior Management Team to oversee day to day hospital operations. He/she may also establish additional committees as the need arises. The CEO should ensure that each committee has clearly defined membership and responsibilities, and should ensure that each committee fulfils its functions.

E) Personnel management and development

The CEO should ensure the recruitment and retention of a qualified workforce that enables the hospital to discharge its activities. The CEO should ensure that an Employee Manual and incentive schemes are developed and submitted to the Board, and should implement these upon approval. The CEO should strive to empower and advance the professional capacity of hospital staff.

F) Quality of care

The CEO should establish mechanisms to measure the quality of care and establish programmes to continuously strive for improved levels of quality. The CEO should ensure that patients' rights are respected by all staff.

G) Regulations compliance

The CEO should oversee compliance with all relevant regulations from government bodies. Such regulations may include safety regulations, employment regulations, finance and audit regulations among others.

H) Management of hospital buildings, campuses and physical assets

The CEO should establish and meet goals for the maintenance and improvement of hospital buildings and campuses and all physical assets including medical equipment and vehicles.

I) Public Relations: community, governmental and professional audiences

The CEO is the chief spokesperson for the hospital's various audiences and should represent the hospital in its dealings with third parties. The CEO should strive to enhance the reputation of the hospital by strengthening relationships with the community, government and professional audiences.

J) Professional development

The CEO should keep current with emerging issues and technologies and ensure that staff members are also kept current in these areas through training, access to resources, and related opportunities.

K) Build Hospital Development Army

The hospital CEO shall ensure the establishment of a functional Health Development Army in the hospital as per the guideline.

L) Strengthen and improve good governance practice of the hospital

The CEO should identify major public concerns and challenges of the staff and strive to solve through developing a 'quick wins' plan.

M) Leadership

The CEO should establish and increase leadership presence within the hospital and cultivate leadership practices from lower to top level management of the hospital through inspiring the hospitals vision and becoming a role model in all aspects.

3.4.3 Accountability and evaluation of the CEO

The CEO is accountable to the Hospital Governing Board, and is the only staff member under the direct supervision of the Board. Evaluations of the CEOs performance should be conducted at least every six month by the Board and/or appointing authority**.** Evaluation criteria should be based on the job description of the CEO. Annual performance expectations should be spelled out at the beginning of each year in discussion between the Governing Board Chairperson, or appropriate member of the appointing authority, and the CEO.

If the Governing Board is concerned about the CEO's performance at any time it should use the evaluation criteria to address these concerns. The discussion can lead to goals for performance improvement in the future. If these concerns have been addressed in the past and no improvements have been made, the discussion may ultimately lead to the termination of employment of the CEO following the process described by Federal or Regional Directives.

3.4.4 Relationship between CEO and Governing Board Chairperson

The relationship between the CEO and the Governing Board Chairperson must be 'managed' well by both individuals in order for the overall operations of the hospital to be conducted at their best. It is mostly the responsibility of the CEO to ensure that this relationship remains professional, courteous, and informative and defines the leadership of the organisation. While Governing Board Chairpersons may come and go, as an appointed volunteer with defined terms of service, the CEO is the hired professional who will hopefully work alongside and maintain the organisation through Governing Board Chairperson successions. The final authority overseeing the hospital is the Governing Board, and as such, the CEO serves at the pleasure of the Governing Board and its Chairperson.

Attending to the needs and dictates of the Governing Board Chairperson is the duty of the CEO, and this hierarchical relationship can be made constructive and successful if the two individuals understand each other's strengths, weaknesses, management/governance styles, responsibilities of their office and each other's personalities. The CEO must elicit support from the Chairperson on matters of importance to the hospital and the community it serves, so that together the Chair and the CEO can be successful in designing strategies that the Governing Board members can endorse and that the CEO can implement within the hospital.

3.5 Hospital Senior Management Team

Each hospital should have a Senior Management Team (SMT) that supports the CEO to oversee the day to day operations of the hospital. The SMT provides information and advice to the CEO, and serves as a forum to shared decision making, thus strengthening the transparency and accountability of hospital leadership.

The SMT is accountable to and chaired by the hospital CEO.

Terms of Reference for the SMT should be defined including: a description of the membership of the SMT, the roles and responsibilities of the SMT, frequency of meetings, voting rules and a statement of confidentiality. Each SMT member should sign a copy of the TOR indicating his/her acceptance.

The SMT should at least meet every week to provide appropriate directions/ decisions, evaluate performance of each unit and identify issues that require the board direction/decision.

3.5.1 Responsibilities of Senior Management Team

The main purpose of the SMT is to assist the CEO and serve as a forum to shared decision making, and, as such, many of the functions of the Management Committee, are similar to that of the CEO.

Specific responsibilities include:

A) Work with the CEO to prepare hospital strategic and annual plans for submission to the Governing Board.
B) Provide reports to the CEO on implementation of strategic and annual plans, according to each committee member's area of responsibility.
C) Identify areas of concern in the achievement of hospital plans, and assist the CEO to find solutions.
D) Ensure that activities of the hospital are carried out with transparency and accountability and that all required reports are submitted to higher authorities (e.g. RHB, BOFED, FMOH, and MOFED) in accordance with government requirements.
E) Ensure the hospital complies with all relevant government regulations.
F) Provide financial oversight, advising the CEO on mechanisms to generate income and minimise expenses.
G) Ensure proper implementation of fee waiver mechanisms and reimbursement.
H) Ensure proper management of hospital buildings, estate, equipment and supplies.
I) Resolve departmental or case team problems or disputes when these are beyond the ability of the department head or case team director.
J) Ensure high quality clinical services by establishing and implementing mechanisms to measure and improve the quality of care.
K) Support workforce recruitment and retention, protecting the health and wellbeing of hospital staff, and creating opportunities for staff development including leadership opportunities.
L) Communicate relevant Governing Board, CEO and Management Committee decisions with subordinate employees.
M) Establishes mechanisms to involve patients and the public in the planning and delivery of hospital services and to maintain close consultation with community leadership.
N) Work to enhance the organisation's public standing and strengthen relationships with community, government and professional audiences.

3.5.2 Membership of Senior Management Team

The SMT should be comprised of senior hospital leaders such as department or case team heads, senior clinical staff and key administrative personnel. It is also recommended that a staff representative, nominated by staff members on a rotating basis, is a member of the SMT. The exact membership will be determined by the organisational structure of the hospital but should include the following personnel (or individuals with similar responsibilities):

1. Hospital CEO (Chairperson of SMT)
2. Chief Clinical Officer /Medical Director
3. Matron
4. Laboratory Head
5. Pharmacy Head
6. Clinical Governance and Quality Improvement Head
7. Two Clinical Department Heads selected based on service volume and relevance
8. Planning Head
9. Finance and Procurement Head
10. Human Resources Head
11. Audit Head
12. Staff Representative
13. General Services Head
14. Medical Equipment Management Head

Hospital staff or representatives of appropriate external bodies may be invited to attend SMT meetings as non-voting members, to provide reports, information or advice to the SMT as the need arises.

3.5.3 Appointment of Senior Management Team Members

The CEO should determine the membership of the SMT, taking into consideration the organisation structure of the hospital and key leadership positions. He/she should recommend the proposed membership to the Governing Board for approval. After approval, specific individuals will automatically be appointed by virtue of their position within the hospital. When a committee member leaves the office which he/she represented he/she will be replaced on the SMT by the next person assigned to that post.

The main exception to this rule is the staff representative, who should be elected by majority vote of hospital employees. This member should serve on the SMT for a time limited period as determined by the Governing Board (generally one year) and should then be replaced by another elected representative.

3.5.4 Duties and responsibilities of SMT

Similar to Board members, SMT members have a duty to:

a) Attend ordinary and extra-ordinary meetings, respecting the time;
b) Accept and implement a decision passed by the majority;
c) Prepare for each meeting by reading agendas, minutes of the previous meeting and other documents distributed for consideration;
d) Follow up on any actions agreed by the SMT in a timely manner; and
e) Maintain confidentiality on all matters discussed by the SMT.

3.5.5 Procedures of SMT meetings

A) Frequency and timing of SMT meetings

SMT meetings should be held at least monthly or more often as the need arises. Extra-ordinary meetings may be called by the CEO at any time.

As far as possible SMT meetings should be held during regular working hours, and committee members should have dedicated time within their work schedule to attend and prepare for committee meetings.

B) Agenda items for SMT meetings

The agenda should be set by the Hospital CEO. All SMT members should be invited to nominate agenda items for consideration by the CEO. The agenda and any documents for discussion at the meeting should be distributed to SMT members at least one week in advance of the meeting.

The following should be regular standing items on each and every agenda of the SMT:

a) Approval of previous meeting minutes;
b) CEO's report – providing an overview of hospital operations, discussion of pressing issues and immediate concerns;
c) Reports from each SMT member providing an overview of their department/function and any pressing issues and immediate concerns
d) Old business – issues unresolved from last meeting;
e) New business – any issues SMT members want to raise; and
f) Next steps – plans for taking action on decisions reached by the Committee, with the assignment of follow up responsibilities to individuals as appropriate.

C) Decision making

Ultimately, the CEO is responsible for all hospital operations and as such has the authority to reach decisions on hospital management matters. However, he/she may decide to determine specific issues by a vote of the SMT. In such circumstances decisions of the SMT should be made by majority vote. In the case of a tie the CEO has the deciding vote.

3.6 Subcommittees of the SMT

The SMT may establish a number of subcommittees to carry out specific duties related to hospital management. Examples include:

A) Quality Committee

This committee is responsible to establish and monitor implementation of a quality management strategy for the hospital.

B) Drug and Therapeutic Committee

A Drug and Therapeutic Committee serves to promote the safe, rational and cost-effective use of medicines within the facility.

C) Infection Prevention and Patient Safety Committee

An Infection Prevention and Patient Safety Committee serves to establish and monitor all infection prevention policies and procedures in the hospital.

D) Medical Equipment Committee

The Medical Equipment Committee serves to oversee all medical equipment maintenance in the facility, including development of a medical equipment strategy, equipment inventory control, procurement plan and preventive and corrective maintenance

E) Major Incident Committee

The Major Incident Committee is responsible to supervise and co-ordinate emergency planning.

F) Disciplinary Committee

The Disciplinary Committee serves to investigate all employee disciplinary charges and to determine the appropriate disciplinary measure.

3.7 Strategic and Annual Planning

Strategic planning is the process of determining what an organization intends to be in the future and how it will get there. The Annual Plan shows how the broader objectives, priorities and targets of the strategic plan will be translated into practical activities. Each hospital should have strategic and annual plans that are developed taking into consideration the mission, vision and values of the organization and aligned with national, regional and local priorities.

Strategic plans should cover a 5 year period and should be ambitious towards reaching the desired outcome. The annual plan should align with this, providing greater operational detail on a year by year basis, tied to the annual budget. The Health Sector Transformation Plan (HSTP) and the Regional/Zonal/Woreda Strategic Plans are the source documents for hospital strategic plans and targets.

Detailed annual plans should have the following features:

- **Scope:** should reflect all activities and budgets, including those implemented by the public sector, donor agencies, NGOs and communities

- **Resource and source of finance:** estimation of the total amount of resources available from all sources (government, specific donors, internal revenue, NGOs etc).
- **Implementation schedule:** a list of major activities, a quarterly/monthly implementation schedule and the responsible body for the implementation of each activity
- **Monitoring framework:** for assessing progress during implementation. This includes key performance indicators, baseline data, annual targets, information sources and collection mechanisms, as well as reporting and feedback mechanisms.

Annual plans should be developed in two stages. The **core plan** is about achieving national targets; the **detailed** plan is the core plan plus other activities of local importance.

In addition to the planning template of the FMOH, hospitals should also follow the processes established by MOFED/BOFED for budget allocation. This involves preparation of an annual plan and budget using the MOFED/BOFED template and submission of this to the appropriate authority. Further details on the budget allocation process are presented in *Chapter 18 Financial and Asset Management.*

3.8 Essential Service Package

Each hospital should develop an Essential Service Package that describes the core functions and clinical services provided by the hospital. The Essential Service Package is the foundation for the Human Resource Development Plan (see *Chapter 17 Human Resource Management*) and for the Model Medical Equipment List and Equipment Development Plan (See *Chapter 15 Medical Equipment Management*).

The Essential Services Package should be developed based on the hospital vision, mission and strategic and annual plans.

Section 4 Implementation Checklist and Indicators

4.1 Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Hospital Leadership and Governance have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in Appendix E of Chapter 20 Monitoring and Reporting.

4.2 Implementation Checklist

The following table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. The table does not measure attainment of each Operational Standard but rather provides a checklist to record implementation activities.

Table 1 Hospital Leadership, Management and Governance Checklist

		Yes	No
1.	A Governing Board has been established based on appropriate legislation		
2.	Terms of Reference for the Board are defined		
3.	The Board meets at a minimum every quarter		
4.	There is a planned orientation programme on hospital operation and relevant guidelines for new Board members		
5.	Board members participate in ongoing education		
6.	Board conducts self-assessment of its performance		
7.	The hospital has a Statement of Vision, Mission and Values that has been approved by the Governing Board		
8.	There is performance measurement practice based on a BSC framework		
9.	There is a regular staff meeting held at least every month		
10.	There is a regular hospital-community forum held at least every quarter		
11.	The CEO has signed a job description that outlines his/her duties to lead the hospital		
12.	There is functional hospital development army		
13.	The CEO is evaluated every six months		
14.	A Senior Management Team has been established. Membership of the SMT has been approved by the Governing Board		

15.	Terms of Reference for the SMT are defined		
16.	The SMT meets as a minimum every week		
17.	The hospital has a strategic plan that has been approved by the Governing Board		
18.	The hospital has an annual plan that has been approved by the Governing Board		
19.	All staff have been oriented to the hospital strategic and annual plans		
20.	There is an ethics violation reporting and responding mechanism in place.		
21.	The hospital assigns a unit to timely collect, properly document, and submit reports of violation, as well as, takes proper actions		

4.3 Indicators

In addition, the following indicators may be monitored on a regular basis to assess the effectiveness/outcomes of implementation of the recommendations provided in this chapter.

Table 2 Hospital Leadership, Management and Governance Indicators

	Indicator	Formula	Frequency	Comments
1.	Number of Board meetings in reporting period	Total number of board meetings in the reporting period	Quarterly	
2.	a) Number of Board meetings cancelled or deferred b) Proportion of scheduled Board meetings cancelled or deferred	a) Total number of board meetings cancelled or deferred in the reporting period b) Total number of board meetings cancelled or deferred in the reporting period ÷ total number of scheduled Board meetings x 100	Quarterly	
3.	Average attendance rate at Board meetings	∑number of attendees ÷ [total number of Board members x number of meetings] x 100	Quarterly	
4.	Number of Senior Management Team meetings held	Total number of SMT meetings held in the reporting period	Quarterly	

5.	a) Number of SMT meetings cancelled or deferred b) Proportion of scheduled SMT meetings cancelled or deferred	a) Total number of SMT meetings cancelled or deferred in the reporting period b) Total number of SMT meetings cancelled or deferred in the reporting period ÷ total number of scheduled SMT meetings x 100	Quarterly	
6.	Average attendance rate at SMT meetings	∑number of attendees ÷ [number of SMT members x number of meetings] x 100	Quarterly	

Source Documents

1. Addis Ababa City Administration Health Bureau. (2009, January). *Directive No. 1/2001 issued to provide for the execution of Addis Ababa City Government Health Services Provision and Health Institutions Administration and Management Regulation No. 26/2001*. Addis Ababa: Addis Ababa City Government.
2. Amhara National Regional State. (2005). Health *Service Delivery and Administrative Proclamation. Healthcare Financing Regulation.* Regulation No. 117/ 2005.
3. Amhara National Regional State. (2005). Health *Service Delivery and Administrative Proclamation. Healthcare Financing Regulation.* Regulation No. 39/ 2006.
4. Department of Health. (1999, March). *Clinical Governance, Quality in the New NHS*. London: Department of Health.
5. Department of Health. (2009, January). *The NHS Constitution for England.* London: Department of Health.
6. Federal Democratic Republic of Ethiopia Ministry of Health. (2007). *The Health Sector Development Program Harmonization Manual*.
7. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, July). *Policy, Business Process Reengineering: Policy, Planning and Monitoring & Evaluation Core Process.*
8. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, January). *HMIS/M&E. Strategic Plan for Ethiopian Health Sector.*
9. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, January*). HMIS/M&E. Indicator Definitions. HMIS/M&E Technical Standards Area 1.*
10. Federal Democratic Republic of Ethiopia Ministry of Health. (2007, May). *HMIS/M&E. Disease Classification for National Reporting. Technical Standards Area 2.*

11. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, January). *HMIS/M&E. HMIS Procedures Manual: Data Recording and Reporting Procedures. HMIS/M&E Technical Standards Area 3.*
12. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, January). *HMIS/M&E. Information Use Guidelines and Display Tools. HMIS/M&E Technical Standards Area 4.*
13. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, August). *Performance Monitoring and Quality Improvement Guideline for the Ethiopian Health Sector.*
14. Federal Democratic Republic of Ethiopia Ministry of Health. (2009, June). *Performance Monitoring and Quality Improvement Guideline for the Ethiopian Health Sector.*
15. Federal Democratic Republic of Ethiopia Ministry of Health. *Data Collection Guide for Healthcare Quality Assessment.*
16. NHS Quality Improvement Scotland. (2005, October). *Clinical Governance and Risk Management: Achieving safe, effective, patient-focused care and services*.
17. Oromia Regional Government Administrative Council. (2005). Oromia *Regional State Health Service Delivery and Administration Regulation No. 56/ 2005*

Appendices

Appendix A Sample Hospital Mission, Vision and Values Statements

A Mission can be defined as 'purpose, reason for being' or simply 'who we are and what we do'.
A Vision can be defined as 'an image of the future we seek to create'.

Mission statement
The mission of [ ] Hospital is to provide all patients quality, accessible and cost effective health care.

Vision Statement
[ ] Hospital strives to be the premier hospital in Ethiopia, recognized nationwide for the quality of care provided.
We aspire to:

- provide an excellent standard of service
- deliver patient care in a way that inspires public confidence
- expand our skills and knowledge to serve our clients
- continually build up our services to meet our clients' needs
- be cost effective and financially secure
- be recognized as an 'employer of choice' in the Ethiopian health system

Underlying principles governing [ ] Hospital

1. [ ] Hospital provides a comprehensive service, available to all.
2. Access to [ ] Hospital is based on clinical need, not an individual's ability to pay.
3. [ ] Hospital aspires to the highest standards of excellence and professionalism.
4. Services provided by [ ] Hospital must reflect the needs and preferences of patients, their families and their caregivers.
5. [ ] Hospital works across organisational boundaries and in partnership with other organisations in the interest of patients, local communities and the wider population.
6. [ ] Hospital is committed to providing best value for money and the most effective, fair and sustainable use of finite resources.
7. [ ] Hospital is accountable to the public, communities and patients that it serves.

Values of [ ] Hospital

Respect and dignity. We value each person as an individual, respect their aspirations and commitments in life, and seek to understand their priorities, needs, abilities and limits. We take what others have to say seriously. We are honest about our point of view and what we can and cannot do.

Commitment to quality of care. We insist on quality and striving to get the basics right every time: safety, confidentiality, professional and managerial integrity, accountability, dependable service and good communication. We welcome feedback, learn from our mistakes and build on our successes.

Compassion. We respond with humanity and kindness to each person's pain, distress, anxiety or need. We search for the things we can do, however small, to give comfort and relieve suffering. We find time for those we serve and work alongside. We do not wait to be asked, because we care.

Improving lives. We strive to improve health and well-being and people's experiences of our hospital. We value excellence and professionalism wherever we find it – in the everyday things that make people's lives better as much as in clinical practice, service improvements and innovation.

Working together for patients. We put patients first in everything we do, by reaching out to staff, patients, caregivers, families, communities, and professionals outside the hospital. We put the needs of patients and communities before organisational boundaries.

Everyone counts. We use our resources for the benefit of the whole community, and make sure nobody is excluded or left behind. We accept that some people need more help, that difficult decisions have to be taken – and that when we waste resources we waste others' opportunities. We recognize that we all have a part to play in making ourselves and our communities healthier.

Adapted from The NHS Constitution for England. DOH, London, Jan 2009.

Appendix B Sample content of Governing Board training programme

Governance:

- What is hospital governance?
- What are RHB expectations of Governing Boards?
- Roles and responsibilities of Governing Board
- Jurisdiction and Power of Hospital Governing Board
- Leadership and Code of Conduct for Governing Board Members
- Role of Chairman, Members and CEO
- Disclosure of Gifts and Loans
- Conflict of Interest
- Meeting Agendas and Rules
- 8 Deadly Sins of Hospital Governance
- Policies, Guidelines and Protocols
- Hospital Committees
- Complaints Management
- Adopting the Code of Conduct
- Public Interest vs. Private Interest
- Dealing with Official Misconduct

Performance monitoring:

- So you think your hospital is doing in a good job. How do you know?
- Hospital Reporting System to Board
- Benchmarking

Patient and community Involvement:

- Patients' Rights and Responsibilities
- Involving the community

Business and Financial Management:

- Planning Cycle
- Hospital Corporate Plan
- Hospital Operational Business Plan
- Annual Budget
- Annual Report
- Revenue and Expenditure
- Raising Revenue
- Commercial activities
- Private Wing
- Fees and Charges
- Grants and Subsidies
- Borrowings

Planning and Development

- Planning and Development
- Land Use Planning

- Masterplan Development
- Building

Local Health Economy and Health Priorities

- Catchment population
- Population demographics
- National priorities and targets (Health Sector Development Programme)

Other

- WHO Six Building Blocks of a Health System
- Worldwide trends in hospital development
- Twinning
- Universal principles for hospital reform

Appendix C Sample Self-Assessment Checklist for Governing Board

Sr.No	List of self-performance parameters	Evaluation Method	Yes or No	Comments
1	**Establishment of Governing Boards, selection and composition of members**	• Are the number and composition of elected/appointed GB members are based on their respective RHB or FMOH Directive?		
2	**Well-functioning governing board**	• Did the Governing Board members define Terms of Reference /Mandate?		
		• Does the Governing Board have an annual work plan?		
		• Does the Governing Board orientate Hospital staff on Hospital statement of Vision, Mission, and Values?		
		• Did the Governing Board approve the strategic plan, annual work plan, and budget of the hospital?		
		• Did the Governing Board hold regular and emergency meetings monthly/ quarterly based on their respective RHB or FMOH Directive?		
		• Does the Governing Board keep minutes of meetings properly?		
		• Is there an orientation programme on hospitals functions and reforms for the all members and updates whenever new Governing Board members assigned?		
		• Does the Governing Board review quarterly and annual hospital performance based on selected indicators and give written feedback?		

		• Does the Governing Board conduct meetings with all hospital staff?		
		• Does the Governing Board conduct site visits of hospital services areas with hospital Senior Management Committee (SMT)?		
3	**Responsive and Accountable Governing Board**	• Does the Governing Board make timely decisions to correct issues that arise from stakeholders/CEO by designing action plan and bring improvements?		
		• Does the Governing Board evaluate the performance of individual members and the board as a team according to the standard procedures?		
		• Did the Governing Board submit regular performance reports to Regional Health Bureau/FMOH?		
		• Does the Governing Board regularly hold community forums to discuss hospital services and get feedback?		
		• Do the board members bring the community's complaints on service delivery to the meeting?		
		• Has the Governing Board designed a code of conduct that governs the team (avoids conflict of interest, corporate obedience – solidarity, board speaks with one voice – confidentiality, loyalty)?		
		• Did the Governing Board get an external /internal audit report?		
4	**Established Hospital Management**	• Has the CEO been signed a job description that outlines her/his duties		

	[Chief Executive Officer /CEO/ and Senior Management Team /SMT/]	and responsibilities to lead the hospital?		
		• Has the CEO been evaluated every 6 months whether s/he performed outlined duties and responsibilities to lead hospital?		
		• SMT has been established and Members of the SMT has been approved by the Governing Board.		
		• Does the Governing Board ensure functionality of Hospital SMT by tracking the regularity of meetings and issues discussed?		

Appendix D Sample Hospital CEO Performances Evaluation Checklist

CEO evaluation process

The board establishes policies of the organisation and delegate's authority and responsibility to manage and run the organisation to the CEO. Given today's challenges and ongoing changes taking place in health care, a formal evaluation process should be established for the purpose of assuring that governing boards and CEOs have a clear consensus of the organisation's goals, job expectations and performance measures. This tool provides information on how regular CEO evaluations may be conducted using a structured evaluation framework which has a rating scale of 1 to 5.

Steps in the CEO performance appraisal process

1. The Board reviews Performance Appraisal Process, invites the CEO and informs the evaluation process.

2. CEO completes same tool and submits to the Board.

3. The Board meets and conducts appraisal process and compares results to CEO self-appraisal. Then Board meets with the CEO to discuss the results of the appraisal process.

4. The Board prepares final forms and a formal cover memo. The Board memo summarises strengths and weaknesses, goals, improvement and development plans, and the overall performance status.

5. The Board sends the confidential evaluation result with memo to RHB or MoH.

Performance appraisal ratingsExceeds expectations (rating result 4-5) – The CEO is making an exceptional, significant contribution to the organisation, constantly accepts responsibilities beyond those of the job held and continuously exceeds expectations regarding completion of work assignments. There are few areas regarding performance of job responsibilities in which he/she could improve.

• **Meets expectations (rating result 3-4)** – The CEO is a steady, consistent, dependable performer and carries out duties in a fully responsible and effective manner. Meets and occasionally exceeds expectations regarding job responsibilities and completion of work assignments. Even though present performance is acceptable, there may be areas regarding performance of job responsibilities in which the person should improve.

• **Needs improvement (rating result below 3)** – The CEO falls below standards or expectations. It is expected that with the appropriate improvement plan, performance will reach a fully

satisfactory level within a specified time period. On this case the Board may consider some leadership change as it desires.

HOSPITAL CEO EVALUATION CHECKLIST				
S.N	**Area of evaluations/Dimensions**	**Method of evaluation**	**Score**	**Comments**
1.	**Governing Board, communication and relationships**	• Does CEO work closely with Governing Board on developing the mission and long-and short-terms plans? • Does CEO work closely with the Governing Board to ensure that they, and any Standing Committees, are assisted and provided with relevant information? • Does CEO inform the board in a timely manner of any issues of concern or risks that affect or may affect the hospital? • Does CEO work with the Board to provide or facilitate trainings of Governing Board members to ensure that Board members are adequately skilled for their roles • Is CEO an effective liaison between the board and clinical staff?		
2.	**Planning, reporting, monitoring and evaluation of hospital operations**	• Does CEO prepare hospital strategic and annual plans and submit these to the Board and to all necessary higher authorities? • Does the CEO send regular performance hospital reform /Key Performance Indicators and financial reports of the hospital to the board timely and consistently? • Does the CEO ensures regular meetings – monthly at SMT and department level and quarterly with whole hospital level to review performance?		
3.	**Financial management**	• Does CEO prepare and submit the budget of the hospital to the Board for approval? • Check CEO with Governing Board are designing various mechanisms to increase hospital revenue?		

		(raised revenue as a proportion of total operating revenue) • Check CEO ensures that financial audits are performed in accordance with government requirements and submitted to the Board and appropriate higher authority in a timely manner. • Does the CEO design various mechanisms to increase hospital revenue? • Does he/she ensure appropriate and timely utilization of budget for both raised revenue and government allocation? (Revenue utilisation)		
4.	**Development of hospital management committee and other structures**	• Has the CEO developed a hospital organisation chart that describes hospital functions and reporting structures and is approved by the Governing Board? • Does the CEO establish an effective SMT with TOR to oversee day to day hospital operations which conduct regular meetings? (at least every two weeks) • Confirm CEO ensures that all committees have clearly defined membership and responsibilities, and fulfils its functions *(Quality Committee, Drug and Therapeutic Committee, Infection Prevention and Control Committee, Medical Equipment Management Committee, Major Incident Committee, Disciplinary Committee)*		
5.	**Personnel management and professional development**	• Check CEO recruits and retains a qualified workforce and assures board involvement and approval. • Confirm CEO strives to empower and advance the professional capacity of different hospital staffs. • Does the CEO engage both clinical staff and non-clinical staff through establishing different professional forums? • Does the CEO keeps up to date with emerging issues and technologies and ensure that staff members are aware of these areas through training, access to		

		resources, and related opportunities? • Does the CEO strive to provide a good working environment for employees, with opportunities for training and development and equitable remuneration? **(Check staff satisfaction survey result and attrition rate)**		
6.	**Quality of care and patient safety**	• Does CEO assure that the hospital's quality assurance mechanisms/strategies are in place and reviewed and evaluated as necessary on an annual basis? • Does the CEO provide resources for quality management? • Does the CEO ensure that patients' rights are respected by all staff? • How is the CEO performance against the hospital annual plan in the following indicators? ➢ ***EHRIG met %*** ➢ ***Outpatient waiting time*** ➢ ***Emergency patient triaged within 5 minutes*** ➢ ***Institutional Maternal Mortality Rate*** ➢ ***Neonatal Mortality Rate*** ➢ ***Bed Occupancy Rate*** ➢ ***Average Length Of Stay*** ➢ ***Delay for elective surgical admissions*** ➢ ***Patient satisfaction rate***		
7.	**Regulations compliance**	• Check CEO oversees compliance with all relevant regulations and reforms from government bodies? (Such regulations may include safety regulations, employment regulations, finance and audit regulations, CASH, HAD…)		
8.	**Management of hospital buildings, campuses and**	• CEO has established and meets goals for the maintenance and improvement of hospital buildings and campuses and all physical assets including medical		

	Physical assets	equipment and vehicles. • Does the CEO ensure clean, safe, and comfortable facilities to patients?		
9.	**Public Relations: community, governmental and professional audiences/Political Effectiveness**	• Develops programmes promoting a positive image of hospital, and creates awareness of available services to local community. • Does he/she represent the hospital in community activities? • Does he/she work closely with community leaders in determining local health care needs? • Does the CEO strive to enhance the reputation of the hospital by strengthening relationships with the community, government and professional audiences? • Does the CEO conduct community forums every quarter?		
10.	**Leadership, management and decisions making**	• Does he/she make sound and timely decisions? • Does he/she challenge, motivate, evaluate and reward employees and managers toward the achievement of goals and objectives? • Is he/she a self-starter, uses innovative problem-solving strategies? • Does the CEO create a feeling of unity among all staff?		
11.	**Personal Qualities**	• Does the CEO demonstrate integrity in his work place? • Does the CEO demonstrate appropriate grooming and dress? • Does the CEO possess sufficient technical skills to successfully perform his/her job responsibilities?		

CEO Evaluation (Part II)

Strengths and Development needs

Based on the responses in Part I

What are the CEO's major strengths *(List at list 3).*

1._____

_____

2._____

_____

3._____

_____

What are the areas that need further development? *(List at list 3)*

1._____

_____

2._____

_____

3._____

_____

What assistance or resources are needed to address developmental needs?

_____

_____

_____

_____

CEO Evaluation (Part III) Overall Performance

Exceeds expectations (average rating result (4-5)
Meets expectations (average rating result (3-4)
Needs improvement (average rating result below (3)

Appendix E Guidelines/etiquette for effective committees and meetings

When a new committee/group is established it is important to:

1) Determine group membership:
    - Consider which departments/people are most involved and should be on the team.
    - Include all points of view, including conflicting ones.

2) Assign a Chair and Secretary

3) Establish Terms of Reference for the group including:
    - Function/duties of the committee
    - Description of outputs expected
    - Realistic timeline for completion of project (if relevant)
    - Statement of who the group/committee is accountable to (if relevant)
    - Frequency of meetings

4) Set schedule for meetings, ideally at a fixed frequency, day and time. (For example, the first Monday of every month at 4pm; or every Wednesday at 3pm). A fixed schedule makes it easier for committee members to plan their schedule and remember to attend the meetings.

For each meeting:

5) The Secretary and Chair should circulate an agenda, the minutes of the previous meeting, and papers for discussion in advance of the meeting. These should be circulated to all committee members in advance (ideally one week before the meeting).

6) All committee members should review the agenda, minutes and items for discussion BEFORE the meeting so that they have full information for discussion at the meeting. If the meeting is spent reviewing items for the first time then much time will be wasted and the meeting will be unproductive.

7) Begin and end the meeting ON TIME. Do not wait more than a few minutes for members who are late.

8) Be concise and stay on topic. If the agenda is long, a time limit should be set for each agenda item.

9) Begin the meeting by reviewing the minutes of the previous meeting and obtaining an update report on any action points that were assigned from the previous meeting.

10) For each item on the agenda agree any action points that need to be followed up after the meeting. For each action assign a specific individual to complete the task and a deadline for completion (for example prior to next meeting, or within one month etc)

11) Prepare minutes of each meeting. These should include a summary of discussions and all action points should be clearly stated with the name of the responsible individual.

2

Liaison, Referral and Social Services

Table of Contents

Abbreviations

A&D: Admission and Discharge

CGQI: Clinical Governanceand Quality Improvement

ICU: Intensive Care Unit

OR: Operating Theatre

OPD: Out Patient Department

Section 1 Introduction

Critical to improving the quality of hospital care is having an effective networked health care system that strives to deliver quality and efficient health services to the consumer. Public hospitals have been implementing the referral and liaison services as part of the *Patient Flow Operational Standards and Guidance* contained in the Ethiopian Hospital Reform Implementation Guidelines for the past 6 years and under the *Ethiopian Hospital Management Initiative* for the past 10 years. Liaison, admission and discharge, referral processes and hospital based social services are critical inputs to efficient flow of patients between services. Properly designed and implemented Liaison, admission and discharge, referral processes and hospital based social services will reduce patient waiting times, increase provider efficiency and staff and client satisfaction as well as improve overall quality of care.

Separating these patient flow related inputsinto a chapter calls for the collective efforts of all hospitals' staff toenhance the efficiency and effectiveness of patient flow within and between hospitals, or between hospitals and patients' homes. This chapter details the inputs required to ensure well-organized patient flow and describes themanagement structures and roles and responsibilities for reception, liaison and referral and social services, the systems and processes for the admission and discharge of patients, and the criteria for the referral of patients between services/ professionals in a given hospital and from one hospital to other health facilities.

Section 2 Operational Standards for Liaison, Referral and Social Work Services

1. The Hospital has established management structures and job descriptions which detail roles and responsibilities for:
    - Reception service
    - Liaison and referral service
    - Social service
2. The hospital should provide liaison services 24 hours in a day and 7 days a week throughout the year.
3. The hospital has a written protocol for the admission and discharge of patients that is known, and adhered to, by all relevant staff.
4. The hospital has a Referrals Service Directory, listing facilities which the hospital may refer patients to or receive patients from, categorized by the type of clinical services they provide.
5. Criteria for the referral of patients from the hospital to other health facilities are established, including standardized referral and feedback forms and necessary clinical documents to accompany referred patients, in accordance with the national referral implementation guidelines.

6. The hospital has a standardized method for managing referrals and staff members are familiar with the referral systems including relevant referral protocols and forms.
7. The hospital promotes and publicizes the referral system throughout the community in order to ensure that all constituents are aware of the applicable service pathway.
8. The hospital has established hospital based social service which addresses the social care needs of patients affecting the efficient and effective flow of patients.

Section 3 Implementation Guidance

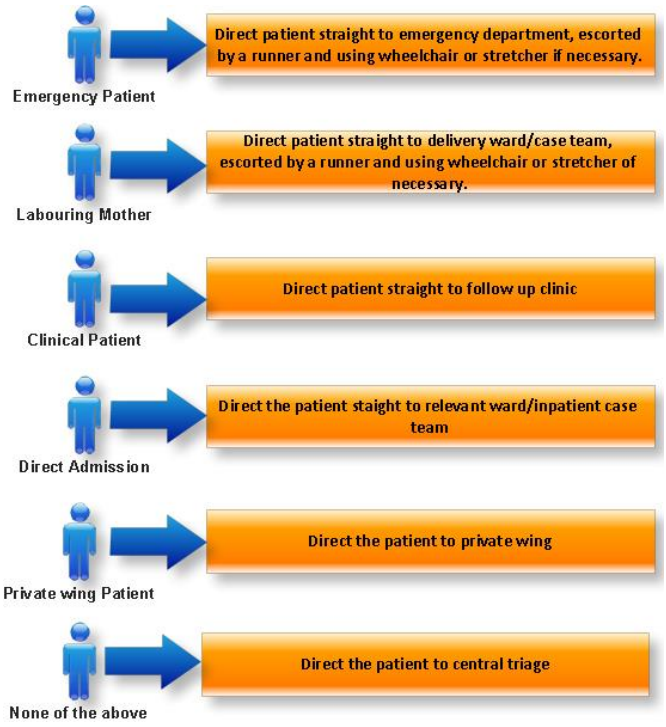
3.1. Reception Service

A patient's experience at a hospital is often impacted by their first encounter. Therefore, it is critical that a patient's reception at the gate is a positive experience. Reception personnel should be stationed close to the main gate to direct patients or visitors to the appropriate location in the facility by providing appropriate information and support.

Reception staff should be easily identifiable (by uniform or identification badges). Reception staff's ability to communicate additional local language would be a plus so as to deliver appropriate information or to direct a patients/visitors to the right track. The reception staff should be knowledgeable of the services provided by the hospital, the staff who provide services (case team leaders etc.), and the layout of the hospital. He/she is directly responsible (accountable) to the outpatient director. Reception staff should ascertain the following from each patient and direct the patient accordingly.

1. Is the patient an emergency?
2. Is the patient a laboring mother?
3. Is the patient having an appointment for a follow-up clinic?
4. Is the patient having an appointment for admission?
5. Is the patient a private patient?

Figure 1 Reception Service Responsibilities



3.2 Liaison Service

Liaison service is vital for effective communication and sustainable smooth flow of patients that need to be operated by liaison officers with special training for the position.Liaison Officer is thus a person that runs the liaison services and liaises between two or more organizations and the public to communicate and coordinate their activities.The hospital should provide liaison services 24 hours in a day and 7 days a week throughout the year.Each health facility should establish a liaison and referral service that is responsible to:

1. Manage hospital bed occupancy (bed management).
2. Facilitate emergency and non-emergency (elective) admission.
3. Facilitate social support to the emergency, inpatient and outpatient case teams.
4. Manage the referral service, specifically:

- Coordinate the overall referral activities.
- Record and report the referral activities to facility management.

- Compile, analyze and interpret data to improve the referral service.
- Take part in the quality assurance programs of the referral system by participating in regular review meeting within and outside the health facility.
- Performance monitoring and evaluation.
- Ensure feedback is sent back to the referring health facility.
- Update the elective admissions waiting list.
- Assign an admission date to patients based on the urgency of the clinical need as date indicated by the physician in the patient notes.
- Ensure regular bed census is carried out, reported and used to update and manage the bed utilization.

3.3 Referral Service

Each hospital should establish a Referral Protocol that outlines the criteria for making a referral to another facility and the process to be followed when making a referral, including use of the Referral and Feedback Form and any necessary clinical documents that should accompany the referred patient. The protocol should be known and adhered to by all relevant staff.

Each hospital should establish a Referrals Service Directory that lists facilities to/from which patients can be referred or received and the services available at each facility (the Referral Network). The contact details of each facility in the Referral Network should be documented. The criteria for receiving/referring patients to each facility should also be documented and agreed between all facilities participating in the Network. Standardized Referral and Feedback formats should be used by all facilities participating in the Network.

For further guidance please also refer to the *Guideline for Implementation of a Patient Referral System in Ethiopia*.

3.3.1 Receiving Inpatient Referrals

A hospital can be both a 'Receiving Unit' for patients referred from other facilities and a 'Referring Unit' to refer patients to another facility.Referrals can be made for both outpatient services and for inpatient admissions.

A. Emergency Referral in

- Each day, (every 8 hours) the liaison officer should asses the number of unoccupied beds, number of patients in the emergency unit/department waiting to be transferred to inpatient wards, and number of patients in the ICU to be transferred to the ward.
- If dispatch/command center is available, the liaison officer has to give report on vacant beds three times a day to the center and update information of the particular day.
- If the service is not available direct communication will be made between health institutions.
- Ensure the ambulance service is in place for 24 hour and is equipped with the necessary medical supplies for critical emergency patients. When a facility calls to refer emergency cases a liaison officer should check the following things before accepting the referral:

1. The availability of beds in the case team where the patient requires service

2. The availability of the service and professional (some service can be given by a highly trained individual professional; in such case the liaison should check the presence of the professional and the service).

3. Appropriateness of the referral, that is, the referral should be based on the referral network and any referrals should not be out of the referral network agreement, or the importance has to be justified with a discussion with the accepting physician.

4. Information on the patient's clinical condition, to insure safe transportation and to consider patient is accompanied by a professional who has life-saving skills.

5. Inform the accepting unit about the incoming patient's status, and the estimated time of arrival to the unit so that the accepting unit will make the necessary arrangements accordingly.

B. Cold Cases Referral in

When a facility calls to refer a non-emergency case that needs admission, the liaison should check the appropriateness of the referral (the same procedure listed above) and the nature of the disease in case the waiting time is becoming prolonged. This information helps to identify the disease progress such as if cancer is diagnosed at its early stage and prolonged appointment may lead for worsening of the diseases, therefore this information will help to prioritize admissions. There could be arrangement of elective admission date and inform the patient through the referring liaison officer. A liaison should present the elective admission list to inpatient case team on regular base preferably on daily bases.

Box- Referral Network and Emergency Command Centre

A Referral Network is a group of facilities that, in aggregate, provide comprehensive health care services in a defined geographical area. The Referral Network is comprised of both Referring and Receiving Units.

Each member of the Referral Network should have a Directory of Services and Organizations within the network, including contact information.

A standardized referral format should be used by each member of the Referral Network.

Ideally, the Referral Network should be developed by the Regional Health Bureau and should include a functioning transport system, with a Unit responsible to co-ordinate and oversee referral activities.

Regions may also establish an Emergency Command Centre to direct emergency patients to an appropriate facility for treatment.

If a Command Centre exists then each hospital Liaison and Referral Service should provide regular updates to the Command Centre on the number of beds available in the hospital.

If an emergency case arrives at the hospital, but cannot be handled by the hospital Emergency Service, or if no bed is available, then the Liaison and Referral Officer may contact the Emergency Command Centre to identify an alternative hospital to which the patient should be referred.

C.Receiving Outpatient Referrals

When a facility calls to refer outpatient referrals a liaison should confirm the appropriateness of the referral, nature of the illness and arranges appointment date and passes the information through the referring liaison officer. The liaison should present the outpatient attendances to outpatient department on regular bases.

3.3.2 Coordinating Referral out Cases

A. Emergency Referral Out

Once the Clinician has decided to refer out a patient the case should be immediately linked to liaison office.

Before referring out a patient a liaison officer should:

- Check referral format is completely filed and signed by the physician.
- If there is a command center in the region the liaison should contact the command center to get appropriate receiving facility.
- Use the service directory and the regional referral network to find appropriate facility.
- Send one copy with the patient and attaching one to the patient medical record.
- Before sending any referral out the liaison officer should ensure bed and service availability at receiving facility.
- The liaison office should insure that the patient has a necessary transport to reach the receiving unit, making use of the facility vehicles/ambulance and professional attendance if it is essential.
- Register the patient on referral register
- If the liaison officer can't find the service or the bed to refer the patient, the patient should stay in the facility with available care until the liaison gets the needed service.
- If the patient is very sick and there are no beds in the receiving institutions the liaison officer has to facilitate online consultation service or has to facilitate communication between referring and receiving doctors/professionals for better management and facilitation.
- If there is any critical or unstable patient that needs admission/stay referral should be made after communication with the referring and receiving physicians/health workers /so that patient transfer is made safely and proper arrangement for the patient management is done.
- Both the referring and receiving health institution liaison officers should make sure critical patients are transported safely and accompanied by professionals who have lifesaving skills.

B. Cold Cases Referral Out

After checking all necessary steps listed above and identifying appropriate facility the liaison officer should communicate with receiving facility liaison officer to pass the appointment information to the patient.

3.2.3 A feedback loop to track referrals

The hospital should collaborate with other facilities in the network and the Regional Health Bureau to promote, monitor and evaluate the referral system. In particular, the hospital should

promote and publicize the referral system through the community in order to ensure that all constituents are aware of the applicable service pathway. For further guidance on mechanisms to inform and involve the community see *Chapter 19 Clinical Governance and Quality Improvement.*

- A system to track a referral from point of initiation to point of delivery and, as a feedback loop, from point of service delivery back to point of initiation is needed to ensure that the client is using the service(s) needed.
- It is clear that the capacity of the lower level health facilities has a great impact on overall health delivery system of a country; in particular the referral linkages of the health delivery system. Feedback and communication in the referral system is a critical step in addressing capacity issues. In addition effective communication facilitates learning and, can inform professionals about the outcomes of the patients that they refer.

- Written feedback provides evidence that the referral process was completed and the service was delivered, and should indicate whether there were problems. Using the original referral request, documenting the status of service delivery and other pertinent information and returning the form to the site of referral initiation is one method of feedback communication.
- The effectiveness of a referral system is determined by the individuals being referred, so it is essential to find out if a client is satisfied with the service received and whether her or his need was met. One method of getting this information is that the facility that made the referral will contact the client directly for feedback, if the client agrees. Another way is to carry out periodic surveys at different points (hospital, health center etc) in the system.

3.2.4 Bed Management

The aim of bed management is to make maximum use of hospital beds, ensuring high bed occupancy, high patient turnover and minimum waiting times for elective admission.

- **Methods for ensuring appropriate utilization of bed**
  - Follow hospital A & D protocol
  - Reduce inappropriate length of stay
    - Regular ward rounds
    - Make maximum use of Administrative service

- **Bed management information system**
  - Bed survey should be done at least 3x a day/3 times/24hrs/

At any time the liaison should and have the following information:

- Free beds in the health facility
- Number of bed that are due to be evacuated
- Likely discharges planned during admission
- Number of beds Occupied in the facility
- Number of patients transfer ins and outs
- Number of 'reserved beds for elective admissions that day

Whenever the hospital is in acute shortage of beds for emergency admission:

- Try to find beds in other wards by communicating with ward clinicians
- Look for likely discharges, if any transfer to waiting place
- Cancel appointed elective admission patient/s for that day

If all the above mentioned solutions are not applicable, refer to the nearest health facility after the patient is made stable and bed/service is secured in the accepting health facility.

3.2.5 Admission and Discharge Process

Effective and coherent admissions and discharge policy for emergency and elective patients are very important for proper utilization of hospital beds. Based on admitting physician's recommendation liaison officer should coordinate beds for admission (Please refer Annex VI: Admission urgency notification card).

A. Emergency admissions processes

Ideally the length of stay should not be greater than 24 hours. Then transfer to ward has to be facilitated for proper inpatient admission if necessary.

If the patient is to be admitted as an inpatient, a clinical member of emergency case team should contact the liaison officers.

As a minimum the following information has to be delivered:

- Patient name and medical record number
- Summary of the clinical history and reason for emergency admission
- Case team to which patient should be admitted like surgical case team, internal medicine case team etc
- Expected date of discharge

When request for admission is made the liaison officer should follow the steps below:

- Is a bed immediately available in the relevant inpatient case team/ward?

  If yes – admit patient

  The liaison officer should inform the case team leader of the receiving ward that the patient should be transferred to that ward and any necessary administrative tasks carried out with the assistance of runner.

- Is there any patient in the relevant case team /ward due to be discharge that day?
  If yes --- confirm that patient will be discharged. Identify and address any factors that are delaying discharge. Consider moving patient to transit lounge (if available) or another waiting area. In this way the bed can be freed and the new patient can be admitted

- Is a bed available within another case team/ward?
  If yes --- discuss with director of inpatient service and the responsible physician for the patient where the patient is located, ensure the patient will be properly followed and managed by appropriate case team, and ensure that the patient is transferred to correct case team bed/ward as soon as a bed is available.

B. Elective Admission Process

Liaison officer has to book elective admission.

- When a patient requires elective admission a clinical member of the relevant case team should send at minimum the following information:
  - Patient name, phone number and medical record umber

- Summary of the clinical history and reason for admission.
- Case team to which patient should be admitted like surgical case team, internal medicine case team etc.
- Urgency of admission (set criteria related to: pathology of the disease, socio-economic status of the patient, and distance of the patient's residence).

- The liaison officer should book the admission date and give an appointment card to the Patient and patient number, and take contact information of patient and/or care giver. The liaison officer should also give his/her or office contact address to the patient so that the patient can phone and get information about his/her admission schedule.
- On the day of admission, the patient should report to the liaison officer and from there he/she will be assisted to make any necessary payment or registration and will be directed to the relevant inpatient case team/ward.
- On a daily basis, the liaison officer should inform each inpatient case team of planned admissions for the following day to ensure that the required service is available and allow the case team to make all necessary preparation for the admission.
- In case admission schedule or treatment is changed the liaison officer should inform the patient and family.
- The following key requirements have been identified to facilitate effective elective admission practices:
  - All patients should have a treatment plan within 24 hours of admission.
  - Centralized waiting list management.
  - Agreement on the parameters for scheduling operation theatre lists with the OR team.

Effective management of the admission process requires knowledge of:

- The total number of beds
- The number of occupied beds at the evening census (bed occupancy)
- The number of beds that are to be evacuated that day
- Number of beds with prolonged length of stay and its causes

The hospital should provide an admission and discharge service 24 hours a day, 7 days a week, 365 days a year, including holidays and weekends. Admissions and discharges should be

arranged and facilitated through the Liaison office. A written protocol for the admission of patients should include: mechanism for arrangement of admission, and activities to be undertaken at the arrival of the patient at the ward.

Upon arrival on the ward, there should be a quick assessment of the condition of the patient by the receiving nurse.

- Patients in critical condition or with emergency signs needing immediate attention, should be received by a nurse who will evaluate the nature and severity of the illness and inform the responsible physician in 15 minutes. If there are emergency clinical signs to be addressed by physicians, the informed physician must come and see the patient immediately.
- For patients in a stable condition, the nurse will initiate the ward admission process, including orienting patients and families to the facilities such as toilets, showers, introducing relevant staff, giving instructions for care-givers etc. The responsible duty physician should then complete the evaluation of the patient in no less than 2 hours. Being the most critical patients directed to the inpatient department, these patients should have comprehensive evaluation, addressing all components of health and diagnosis should not rely on OPD evaluation notes as there may be a misdiagnosis or developments in the condition of the patient.
- Nursing process need to be completed in no later than 8 hours (before the next shift) and all efforts have to be made to make patient centered and improve the overall quality of the care beyond documentation.

C. Discharge process

The hospital should establish a written protocol for patient discharge. The hospital should also design and own a discharge summary and mechanism of handling medical records afterwards. Decision for discharge should be made by the treating physician, who should complete a discharge summary. First copy of the discharge summary should be given to the patient, while the second copy has to be documented in the Medical Record. If the patient was referred from another facility, the discharging physician should also complete the feedback section of the referral paper, and, that should, be given to the patient, to give to the referring health institution.

Patients ready for discharge should be counseled by the attending physician, nurse in charge and clinical pharmacist before discharge. Pre-discharge counselling encompasses the following:

- Share the discharge plan while patient is on the ward, before starting the process
- An explanation of the patient's diagnosis, investigation results and treatments given
- An explanation of any medications that the patient should continue to take upon discharge
- Arrangements for follow up, if any
- Any 'caution or attention' that the patient has to be aware of

The discharging nurse has to make sure all the necessary registers are filled and administrative duties, including financial issues are settled before the patient is sent to the liaison office

The discharge process should be complete in no more than 2 hours (including administrative issues). The patient with their medical record must to be sent to the liaison office, with the help of a runner. The liaison officer has to check the completeness of all the necessary documents and send the patient home after filling the necessary registers (With appointment card and appointment register filled, if appointment was asked for on the discharge summary sheet.

D. Patient death/post mortem care

There shall be a policy or a protocol that states the procedure to be followed for dead body care, including how the staff breaks or informs the families and also considers the cultural ceremony to be followed. A death occurring in the hospital should be confirmed by at least an attending physician or any independent practitioner and the nurse giving care. The Inpatient service should have a separate room for '*after death care*'. A death summary should be completed and documented in the patient's medical record, to ensure accuracy and easy retrieval.

In case of a need for pathologic examination and confirmation for cause of death, a post mortem examination form should be completed and the body should be transferred to the pathology case team or morgue. Following completion of necessary medical examinations, the body shall be stored in the hospital's morgue until it is collected by the patient's relatives or other responsible person. If the patient does not have a next of kin, the local authority is responsible for collecting the body. Any unexpected deaths should be reported to and investigated by the hospital's CGQI unit.

3.4 Human Resource and Equipment

- At least two liaison officer per shift but differ based on the number of patient served (BSc or MSc in nursing)
- At least two social workers (BSc or MSC in Sociology/Social work)
- At least two receptionists but, the number differs based on the complexity of the hospital.
- Runners (at least two)
- Computer
- Office furniture (chair and table)
- Wheelchair
- Stretcher
- Telephone (direct line and Mobile)
- Shelve

3.5 Hospital Based Social Work Service

Social work is an academic and professional discipline that seeks to facilitate the welfare of communities, individuals and societies. It may promote social change, development, cohesion, and empowerment. Underpinned by theories of social sciences and guided by principles of social justice, human rights, collective responsibility, and respect for diversities, social work engages people and structures to address life challenges and enhance wellbeing.A social work service in a hospital is organized to provide services such as **case management** (linking clients with agencies and programs that will meet their psychosocial needs including finance), counseling and psychotherapy services.

Counselling/Psychotherapy: assess role of emotional and social/cultural factors on health status and behaviour and provide appropriate intervention; enhance coping capacities related to feelings of loss, grief and role changes; assess and intervene related to mental health concerns such as anxiety, depression, anger management.

Patient/FamilyEducation:educate patients and families to facilitate understanding of hospital processes; increase understanding of illness/disability on relationships; and facilitate life transitions when health conditions require a modified lifestyle.

ResourceCounsellingandDischargePlanning:identify and address barriers to discharge; locate resources; identify options and available supports; facilitate referrals and applications to government/community agencies; advocate for access to resources; coordinate referrals and/or

placement plans; assist patient and family to emotionally prepare for transitions; prevent readmissions for non-medical reasons.

Section 4 Implementation Checklist and Indicators

4.1 Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Liaison, Referral and Social Care have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in Appendix E of *chapter 20 Monitoring and Reporting*.

4.2 Implementation Checklist

The following Table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. This tool is not meant to measure attainment of each Operational Standard, but rather to provide a checklist to record implementation activities.

Table 1 Liaison, Referral and Hospital Based Social ServicesChecklist

		Yes	No
1.	A Liaison and Referral Officer has been assigned.		
2.	A hospital social worker is in post.		
3.	There is hospital liaison and referral service.		
4.	There is a hospital based social service.		
5.	There are personnel trained in liaison, referral and hospital based social care work services.		
6.	Emergency and central triages are equipped with necessary supplies and equipment.		
7.	Outpatient appointment system is in place.		
8.	There is an appointment system for elective inpatient admission.		
9.	There is a written protocol for admission and discharge of patients.		
10.	There is a written protocol for the referral of patients (receiving into the hospital and referring outside of the hospital).		
11.	There is a referral directory listing which facilities that hospitals can receive patients from or refer patients to.		
12.	Bed occupancy information is gathered and reported.		

4.3 Indicators

In addition, the following indicators may be monitored on a regular basis to assess the effectiveness/outcomes of implementation of the recommendations provided in this chapter.

Table 2 Liaison, Referral and SocialServicesIndicators

No	Indicator	Formula	Frequency	Comments
1.	a) Number of referrals made to other facilities b) Referral rate (referrals made to other facilities)	a) The total number of OPD, ER or admitted patients who were referred to another facility with a referral paper b) The total number of OPD, ER or admitted patients who were referred to another facility with a referral paper / total OPD visits, ER visits and inpatient admissions*100	Quarterly	• Register at referring service • Tracking slips
2.	Proportion of feedback received from total referral	Number of feedback forms completed ÷ Number of referred patients who were discharged back to the referring facility during the reporting period x 100	Quarterly	Source of data - referral database
3.	Ambulance utilization by emergency patients	Number of emergency room patients arriving at the hospital by ambulance÷ Number of emergency room attendances x 100	Monthly	Source of data- emergency room database/register

Source Documents

1. Federal Ministry of Health. Ethiopian Hospital Reform Implementation Guidelines (EHRIG). May 2010. Addis Ababa, Ethiopia.
2. Federal Ministry of Health.The National Admission and Discharge Protocols for Ethiopian Hospitals. July 2012. Addis Ababa, Ethiopia.
3. Federal Ministry of Health. National Liaison and Referral Manual. Unpublished.

3 Emergency Services Management

Table of Contents Page

Section 1 Introduction

Hospital based emergency medical services are part of the patient flow in a hospital setting and includes the processes and procedures needed to ensure the efficient flow of patients between services. Patient flow requires various inputs including human resources, infrastructure, equipment, protocols and pathways. Properly designed and implemented hospital based emergency medical care services will reduce patient emergency triage and treatment times, increase provider efficiency and staff and client satisfaction as well as improve overall quality of care.

Emergency Medical Services (EMS) overall are a network of services and resources coordinated to provide aid and medical assistance from primary response to definitive care, involving trained personnel and use of appropriate technologies in the rescue, stabilization, transportation, and advanced treatment of traumatic, obstetric and medical emergencies.

EMS can be given in a pre-hospital or hospital setting. Pre-hospital refers to all environments outside an emergency department resuscitation room or a place specifically designed for resuscitation and/or critical care in a healthcare setting. It usually relates to an incident scene but includes the ambulance environment or a remote medical facility.

This chapter details the inputs required to ensure well-organized hospital based emergency medical services from the patient's arrival at the entrance of the hospital until the patient is either admitted as inpatient/transferred to outpatient services, referred to other health facilities, discharged home and exits the hospital. Emergency Medical Service processes described in the chapter include EMS organization, triage and treatment and case management processes are also outlined.

Section 2 Operational Standards

1. The hospital shall have an emergency department led by an emergency medical director / case team manager.
2. The hospital has an Emergency Triage, staffed with necessary infrastructure, appropriately trained personnel and equipped with necessary equipment, drugs and supplies needed to provide quality emergency medical services.
3. The hospital shall have easily accessible Emergency department with an ambulance parking area.
4. The hospital shall establish efficient flow of Patients in the emergency department.
5. The Emergency Department or Unit shall use a triage system of screening and classifying patients to determine their priority needs and to ration patient care efficiently.
6. The hospital provides emergency medical service 24 hours a day and 365 days a year with a 24-hours' access to diagnostic laboratory, radiology and pharmacy services.
7. There is emergency response plan for both internal and external disasters with a system to alarm or communicate personnel and other stake holders.
8. Emergency department or Unit has policies, protocols, flowcharts, consultation and treatment guidelines for running ED/EU.

Section 3 Implementation guidance

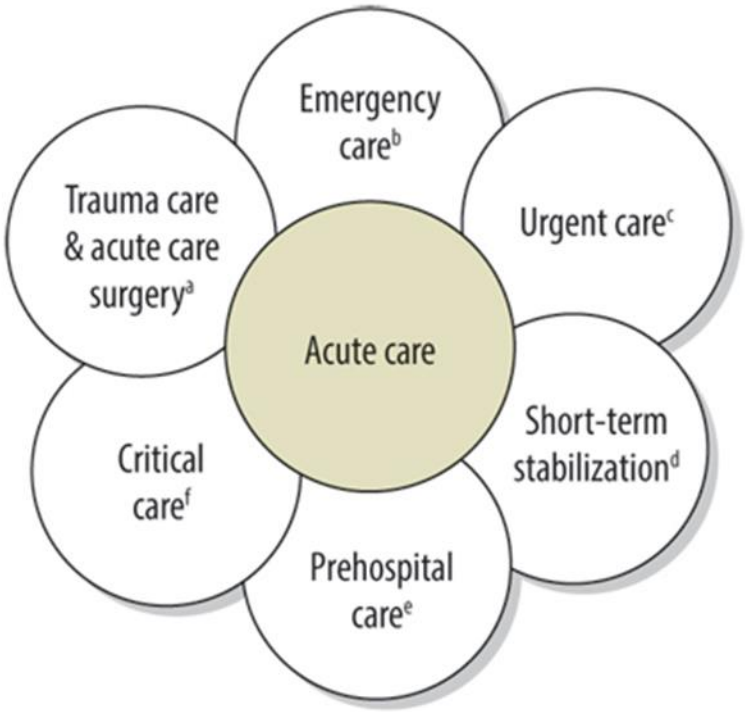
3.1 Emergency Services Management and Organization

The Emergency Case Team should be overseen by a Director of Emergency Services. He/she is responsible for all activities conducted in Emergency Services including:

- Patient triage,
- Case management, and
- Laboratory, pharmacy and diagnostic services.

The Director of Emergency Services is responsible for managing all department staff and should ensure that equipment and supplies are available for the patient load. The Emergency Department or Unit shall serve as the definitive specialized care area/facility, equipped and staffed to provide rapid and varied emergency care to all people with life-threatening conditions. The Emergency Department or Unit shall provide initial appropriate care and arrange subsequent disposition as per domain of care. (See figure1 below).

Figure 1 Domains of Acute Care



3.2 Emergency Services Layout

The Emergency Services should be organized so that the Emergency Service's entrance can be easily accessed by ambulances and patients. This means that the emergency unit should be located on the ground floor for ease of access and should be clearly labelled in a way that is visible from the hospital's gate. Its entrance signage should be clearly illuminated and has multi-lingual labels ,preferably red background with white colour labels, that is visible from the street (even at night),and addressing the cultural and linguistic diverse needs of its communities. There should also be an area dedicated for patient drop-off and ambulance parking.

The hospitals should have adequately designated space for emergency unit and emergency services should have the following facilities in required standards:

A) Ambulance parking space and entrance

The ambulance parking space should be close to the emergency unit entrance, well-lit and available exclusively for patients, their relatives and staff. Protected proximate parking areas should be available for urgent staff on-call shifts. Hospitals' ambulance entrance environments provide important reception and treatment areas in the event of a disaster or chemical/biological/radiation incidents. Direct access to an internal decontamination room should be available. Appropriate physical barriers should protect "drop off" zones.

B) Patient assistant area at Emergency gate

Patient assistant staff (receptionist) at the emergency gate receives; support and direct patients arriving for emergency care and ensure proper handover of patients. They should be easily identified with reflective jackets. All patient assistants should be trained in patient moving and handling, basic life support, communication skill and infection prevention and control procedures.

There should be communication and patient support devices in the patient assistant area of the emergency reception area, including:

- Wheelchairs and stretchers
- Telephone or walky-talkies
- Tricycle ambulance(optional)

Patients arrive at emergency departments/units in different ways, including ambulance, public transport or/and independently walking /supported by family and support should be provided as per individual patient needs.

For example: for patients arriving to the ED/EU by public transport or walking, a receptionist at the hospital gate should guide or give appropriate support to the patient either by providing a wheelchair, stretcher or assist the family to reach to the triage area.

For critically ill patient arriving by ambulance, the ambulance crew should notify the hospital ED/EU about the nature of the patient's condition and receive instruction on en-route patient

management plan. This will enable the hospital ED/EU to prepare well ahead of the incoming patient. The triage nurse and a porter and/ emergency physician should be on standby at the ED/EU gate to receive the patient from the ambulance crew and commence appropriate emergency care and treatment based on the patient's condition. The ED/EU receiving team should ensure they receive the patient care sheet from the pre hospital ambulance care giver as part of the patient handover.

C) Triage area

The triage area is the1st contact point for patients with the ED/EU staff and should be situated at the entrance of the ED/EU with easily recognizable signage for patients and the general public. The triage area should be equipped with the required triage equipment and supplies (see annex), and staffed by trained and experienced triage professionals, including patient assistants. Staff assigned to the triage area of the ED/EU should be available onsite and ready at all time to receive incoming patients. The patient assistant is responsible for patient support, safe moving and handling, and, preparing wheelchairs and stretchers for use when they are needed. Patient assistants, therefore, need to be trained on basic life support (BLS), infection prevention (IP), and communication skills. Patients with life or limb-threatening conditions may bypass the triage area to be managed in the resuscitation area. The triage documentation for patients requiring resuscitation should be retrospectively.

D) Decontamination Room

A decontamination room should be available for patients who are contaminated with toxic substances. In addition to the requirements of an isolation room, this room must:

- Be directly accessible from the ambulance bay without entering any other part of the department.
- Have a flexible water hose, floor drain and contaminated water tap.
- Have storage space for personal protective and decontamination equipment

E) Medical records/Cashier/Social worker

An operational relationship between medical records, cashier and social worker should exist to ensure patient details are recorded, or a previous medical record is retrieved. The patient assistant should assist patients or their relatives with registration payments to the cahier, the latter which should be situated next to the medical record personnel. Patients without the ability to pay for their treatment should be handled by the hospital social services without delay.

There must be a separate emergency medical record corner (under the main MR in the hospital). Access is required to ensure patients' previous medical histories are obtainable without delay. So emergency patients must not have to line up to get registered. A system of mechanical or electronic medical record transfer is desirable to minimize delays and labour costs. Access to medical records must be available 24 hours/day and 365 days a year.

Regardless of the availability/non-availability of accompany family member of an emergency patient, medical registration should be carried out with the help of or fully by the nurse assistants/ runners.

Serving patients in a single window (one stop shopping) is strongly recommended to ensure cashiers are located next to the medical registration room.

F) Waiting area

The emergency-waiting area should be located near to the triage area with easy access and suitable for observation and follow up of patients by the triage nurse. Patients with stable conditions should remain in the waiting area until the physician is ready to evaluate their conditions. The triage nurse should continue to observe, communicate, reassurance and re-triage waiting area patients, as per need, until they are transferred to another service within the hospital. The waiting area should be kept clean, brightly lit and well ventilated.

G) Isolation room

Isolation rooms should be provided for the treatment of potentially infectious patients. They should have a room with scrub up facilities, negative ventilation, and be self-contained linen-suite facilities. The rooms should be fitted with acute treatment area facilities and located adjacent to patients' reception area, i.e. triage to allow for the immediate isolation of potentially highly infectious based on the hospital's standards.

Isolation rooms may also be used to treat patients with conditions which require separation from other patients e.g. patients who require privacy for clinical conditions, or who are a source of visual or auditory distress to others. Deceased patients may be placed for grieving relatives to spend time with their deceased ones. These rooms must be enclosed completely from floor to ceiling.

H) Resuscitation area

The resuscitation area is a key area of an emergency department. It usually contains several individual resuscitation inlets, usually with a dedicated fully equipped resuscitation area adjacent to triage area. Each bay is equipped with resuscitation equipment and supplies (see annex) with systematic refill mechanism and displayed in one cart (crash cart)

I) Emergency OR

The operating room should be readily accessible to the Emergency Services Case Team. If the workload is high, there should be a specific operating theatre for Emergency Services only. However, the general operating theatre may be used if the workload is less, in which case emergency cases should always be given priority over elective/cold surgical cases.

J) Examination area

A separate examination room for each patient and physician is not mandatory at the ED/EU since emergency patients' physical examination can be done in the resuscitation room. However, multi-purpose examination cubicles should be organized for less critical patients. ED/EU physicians should use the multi-disciplinary station/counter in-between patient interventions for writing. Implementing such an arrangement will ensure one cubicle can serve many physicians and patients.

K) Procedure area

This is an area where clean and sterile procedure equipments are stored and non-critical procedures like minor wound care and others are carried out. Procedures for critical patients should be carried out in the resuscitation area with continued/ongoing resuscitation.

L) The observation and treatment area

This is an area for stabilization and observation of patients who still need to be confined to bed or an area to keep patients for 24hrs or less until they are transferred to inpatient wards or other health institutions. The observation area is a continuum of the resuscitation area, and patients in this area require strict follow up and continuation of initiated treatment. Nurses need to monitor patients 'vital signs regularly and most senior physicians' need to conduct frequent medical rounds (expected 2-3times/day), write up progress notes 2-3times/day according to patients' conditions and as per national treatment guidelines.

M) Pharmacy

All medications and equipment for the resuscitation and management of emergency patients should be readily available at each treatment and or procedure areas. Proximity is desirable to enable prescriptions to be filled by patients with limited mobility. The aim of having readily accessible pharmacy services is to ensure speedy refilling of fast moving essential emergency drugs and supplies without delay and auditable drug and supply management. The pharmacist/druggist should work closely with the nurse responsible for refilling and establish an efficient refilling process.

N) Laboratory/ sample collection and testing facilities

Laboratory samples should be obtained within the emergency department and analyzed either within the department or at the central laboratory, depending on the test requested.

At a minimum the following tests should be provided in the Emergency Department:

- Hemoglobin,
- Hematocrit,
- Blood film,
- Blood group and cross match,

- Total cell count,
- Random blood sugar,
- Urinalysis,
- Stool examination, and
- Pregnancy test.

More complex tests may be performed in the Central Laboratory. If the sample is to be tested in the central laboratory then a runner should take the specimen to the laboratory and collect the result.

O) Portable imaging facilities and bay in tertiary hospital level

This is used to house and charge mobile x-ray equipment which should readily be accessible to the major treatment areas including the plaster room. Having the portable X-ray and ultrasound minimizes delay of management of patients; therefore it has to be considered as mandatory. And there should be a 24/7 radiology service with a radiologist or a delegate available.

P) Nurses and physicians station

This is an area where a counter table with multiple chairs and computer is placed. All documentation tools and patient charts are kept electronically and manually here. Additionally, the station should internet network and reading materials for easy reference.

Q) Administration room

Offices provide space for the administrative, managerial safety and quality, teaching, and research roles of the emergency department. Office spaces should be provided based on the role delineation of the emergency department.

R) Staff room /Meeting room

This is an area where staff in the ED/EU will have refreshment during duty hours. Ideally emergency staff should not go out for tea/ lunch/dinner, or to duty rooms for rest. Such rooms should be equipped with comfortable chairs, equipment's and supplies for refreshment.

Adjacent to or in the ED/EU, hospitals should also provide nurses and physician's morning meeting room according to discuss cases and resolve identified major problems through quality improvement trainings and discussions within the ED/EU.

S) Utility areas

Clean Utility

This should be of sufficient size for the storage of clean and sterile supplies with adequate bench top area for the preparation of procedure trays and equipment.

Dirty Utility/Disposal Room

Access should be available from all clinical areas. There should be sufficient space to house the following:

- Stainless steel bench top with sink and drainer
- Pan and bottle rack
- Bowl and basin rack
- Utensil washer
- Pan/bowl washer sanitizer
- Flushing sink
- Storage space for testing equipment, Eg. urinalysis
- An optional disposal room adjacent to the dirty utility should be considered.

T) Supportive service (security, cleaning, porter)

ED/EU could be a unit where agitated patient or relative present. And also, it is also a place where expensive equipments are placed at the bays. Considering this, there always have to be a security personnel assigned to protect the safety and environment of the ED/EU.

To keep emergency unit tidy and clean every 24 hrs. the cleaner should be available in emergency department and always be on board to act immediately on environmental safety and cleanness.

In Emergency Department, staff and patient as well as male and female toilets and bath rooms should be separate with continuous water availability and light in recommended ratio. Rooms in the emergency floor should also have adequate ventilation system.

Emergency unit relies heavily on porters to escort patients and materials throughout and between all hospital buildings. Porters should receive some specialized training on emergency patient handling. The main focus of porter services is moving patients from the gate, ambulance and between different departments within the hospital. In addition, they transport blood products, lab specimens, X-ray results, wheelchairs, stretchers and charts from one location to another as needed.

In case of moving critical patient, other workers, such as nurses and physician, may be called upon to perform emergency care to avoid delays for urgent cases. The porter service should be available all units 24 hours a day.

Communication system: ED/EU of hospitals needs to communicate with Dispatch center, pre-hospital care providers, and other health facilities, and community. For this purpose the ED/EU has to be equipped with direct telephone, radio communication, walky-talky and Internet services. For fast and efficient communication between the ED staff, all staffs in the ED have to have pager where feasible.

Equipment/store room: This is used for the storage of equipment (Eg. IV poles) and disposable medical supplies for the department. There should be sufficient space to store and charge battery powered equipment, e.g. Infusion pumps. This does not include storage space within treatment areas. As a general principle, emergency departments should have sufficient storage space to carry 72 hrs. supplies of disposable medical supplies and intravenous fluids. Local logistic issues

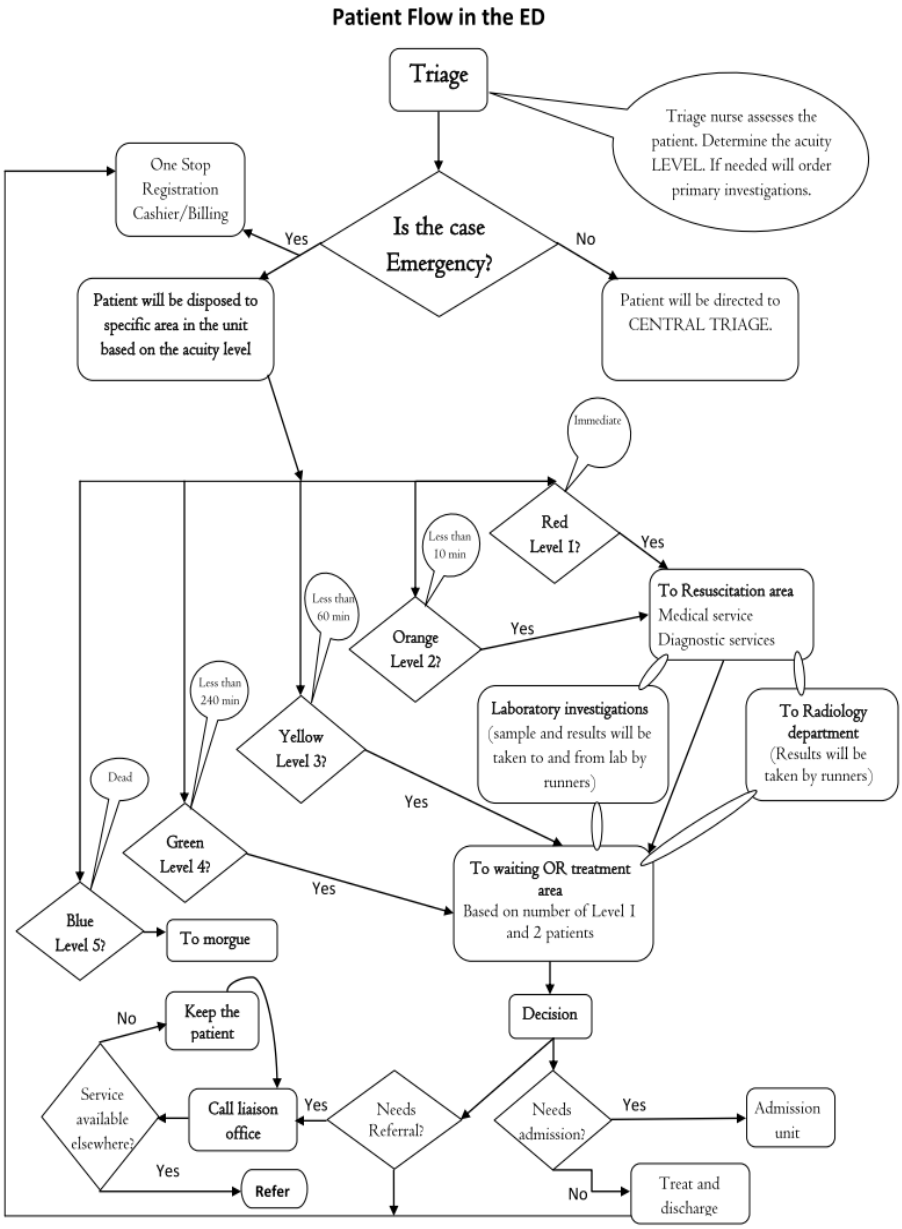
and risk management considerations may dictate larger storage capacity. This area should be accessed by the nursing and physician staff available.

U) Disaster or mass causality equipment store

This should be located near the ambulance entrance and should be of a size consistent with the role of the ED in a major incident or disaster. There needs to be hanging space for specialized clothing/ protective suits, work benches for equipment checking and power outlets for battery banks.

3.3 Emergency patient flow/pathway

Patients entering the hospital through the separate Emergency Department entrance, via ambulance, from the reception desk or those referred to the Emergency Department from Central Triage should undergo Emergency Triage. If further investigations and/or treatments are required following triage, these should be provided by the Emergency Case Team. Patients that are not classified as emergency cases should be referred to Central Triage.



3.3.1 Emergency patient Triage

A) Emergency Triage Activity

Triage can be defined as the "sorting of patients into priority groups according to their need and the resources available."[1]It is a method of ranking sick or injured people according to the severity of their sickness or injury thus minimizing delay, saving lives, and making the most efficient use of available resources. During emergency triage any problems identified with

[1]World Health Organization. 2016. *Updated guideline: pediatric emergency triage, assessment and treatment. Geneva: World Health Organization.*

critical body functions (airways, breathing or circulation) should be given due attention and resuscitated immediately.

Ideally, adult and paediatric Emergency triage areas and triage staff for emergency patients should be separate. However, if the workload is low a single triage may serve both adult and paediatric patients in the emergency department. In this case, paediatric patients should be given priority over adults in the event that more than one patient requires Emergency Triage and management at the same time.

For ease of access and preparation of emergency staffs and facilities, Triage officers should be communicated before patient arrival via liaison service. Conditionally the triage officer will notify the proper case management team for possible resuscitation or urgent procedures.

The Emergency triage service should be provided 24 hrs a day, 365 days a year. National Adult, obstetric and Paediatric Triage Protocols should be developed and implemented. Protocols should be posted on the walls of triage areas as an 'aide memoire' for triage staff.

Emergency Patients should access to the triage area without hindrance of their financial capacity and/or security guard. Initially a patient arrived in emergency triage area should be assessed by a nurse (typically the "triage" nurse), who makes an initial judgment of how rapidly emergency care needs to be rendered. If a patient needs decontamination, he/she must be directed immediately to decontamination area. The triage nurse(s) has to have training on triage and emergency life saving techniques. The triage nurses have to be at the triage area all the time 24/7

The main activities

- Initiate appropriate triage assessment
- Make a decision on the level of patient acuity (Red, Orange, Yellow, Green and Black) using the standardized triage format and supportive guidelines.
- Dispose patients according their level of acuity to the resuscitation, examination or waiting area.
- Initiate appropriate nursing interventions when necessary.
- Re-triage, reassure and make very important investigations for patients waiting in the waiting area.
- Secure the safety of patients and staff of the department.
- Maintain patient privacy.
- Provide patient and public education where appropriate to facilitate.
- Act as liaison for members of the public and other health care Professionals.

All Adult patients need to be triaged by five level color coded emergency triage system as Red, Orange, Yellow, Green, Black or Blue using emergency severity index level. Then the triage

officers should make sure that the patient can actually receive appropriate treatment for his/her presentation or acuity level.

Whereas for pediatric patients the triage officers decides whether the patient will be seen immediately and will receive life-saving treatment/Emergency/, or will be seen soon /priority/, or can safely wait his/her turn to be examined /Queue (Non-Urgent)/ based on Emergency Triage and Treatment/ETAT/ protocol.

Following the initial assessment and triage to stabilize vital functions, patients should be assigned to the Case Management Team for further investigations, treatment and follow up. The triage nurse should always make sure that the triage sheet is completed and attached to patient triage.

During triage and case management of emergency cases, runners'- should handle relevant administrative processes (such as patient registration, retrieving the patient's medical record, making payments etc). For further information on the process of registration see *Chapter 6 Medical Records Management.*

B) Emergency Triage Human Resource Requirements

The Emergency Triage Officer should be trained in Emergency Triage and Emergency Case Management. He/she should be a nurse or physician but if this is not possible another skilled health worker may take this role. He/she should be assisted by a Clinical Nurse and runner. If the workload is high the hospital may appoint more than one Emergency Triage Officer, Nurse and Runner.

C) Emergency Triage Equipment and Supply Requirements

The emergency triage should be equipped with the following items as a minimum. Each hospital should conduct its own assessment to determine the quantity of each item and any other necessary items in addition to the following:

- Desk
- Chairs
- Examination coach/stretcher
- Thermometer
- Adult Stethoscope
- Paediatric Stethoscope
- Adult sphygmomanometer
- Paediatric sphygmomanometer
- Light source
- Tourniquet
- Pulse oximetry

- Glucometer
- ECG monitor
- Defibrillator
- Oxygen
- Neck collar, Back board and Lumbar brace
- Oral and nasopharyngeal airways- adult/paediatric size
- Ambu bags- adult/paediatric size
- Suction machines and tubes
- Finger prick glucotest and finger prick haemoglobin
- Urine dipsticks and urine pregnancy tests
- Weight scale- adult/paediatric- hanging, tape measures
- Screens, partitions or separate rooms
- Walkers, wheelchairs, stretchers
- Gloves, face masks and other personal protective equipment
- Essential Emergency drug supply (See *Chapter 10 Pharmacy Services* for a list of recommended drugs).

D) Emergency staffs Training Requirements

All emergency clinical staff should be trained to conduct triage and emergency treatment, following the established triage protocols and emergency medicine manual.

3.3.2 Emergency Patient Resuscitation

All patients with life threatening conditions and with CVS arrest admitted to this area for resuscitation. In one ED/EU there must be 2-3 resuscitation couches for adult and same number for children. The staff ratio has to be 1:1(one nurse for one patient). At the beginning of the resuscitation multiple specialty physicians and nurses might participate according the patient's condition. The nurse on charge for this coach is responsible for availing and maintaining emergency supplies and drugs. After resuscitation the patient must be transfer to the appropriate designated area (observation room, ward, OR, or can be referred to the appropriate level of health facility for continuation of management)

3.3.3 Emergency patient Observation/Treatment

After resuscitation or patients who require temporary short term observation and management is admitted to this area. The number of beds for observation varies from hospital to hospital according their load, but it is advisable to have 5-10beds as a minimum. Patients kept in this area needs frequent evaluation by the ED/EU physician, available senior and nurses. The nurse patient ratio is 1:3.

3.4 Emergency Case Management

Patients enter the emergency case management pathway upon disposal from the Emergency Triage Officer. Appropriate care is then initiated by the emergency case management team and based on the outcome the patient is admitted, discharged (with or without a follow up appointment) or referred.

A) Emergency Case Management Activity

The emergency case management team should perform primary and secondary survey of the patient and facilitate any diagnostic and/or therapeutic procedures as required. The physician on duty should take a full history and examine the patient and arrange for any investigations required. In addition emergency nursing assessment should also be done for all patients stayed in the ED/EU.

Every patient in ED/EU should be continuously being monitored and reevaluated by nurses and physicians. Depending on information obtained by this continuous monitoring, previously chosen course of diagnostic testing or therapeutic intervention may need to be modified. If patients with complicated social and psychological dimensions are encountered, all of their problems must be sorted out in the ED by a social worker. Once the necessary evaluations made, a decisions made as to whether the patient needs to be admitted to the hospital or can be safely discharged home

Laboratory samples should be obtained within the emergency department and analysed either within the department or at the central laboratory, depending on the test requested.

At a minimum the following tests should be provided in the Emergency Department:

- Haemoglobin,
- Haematocrit,
- Blood film,
- Blood group and cross match,
- Total cell count,
- Random blood sugar,
- Urinalysis,
- Stool examination, and
- Pregnancy test.

More complex tests may be performed in the Central Laboratory. If the sample is to be tested in the central laboratory then a runner should take the specimen to the laboratory and collect the result.

If radiology tests are required these too should be conducted in the Emergency Department using a portable X-Ray. If this is not possible a runner should transport the patient to the X-Ray department where the test will be conducted. Results should be taken back to the Emergency Department by a runner.

A cashier service should be available within the emergency department for the payment of all emergency room treatments, investigations, drugs and consumables. Runners should assist the patient and/or caregiver with making payment.

Patients who require close observation and needs emergency treatments (such as IV fluid administration, a loading dose of IV antibiotics etc) may be transferred to a bed in the Emergency Services and kept for a maximum of 24 hours. Any patient who requires treatment for a longer period of time should be admitted to an inpatient ward.

Following assessment, investigation and treatment the patient may be discharged home, referred for a follow-up appointment at the outpatient services admitted to an inpatient ward or referred to another facility.

If an outpatient follow up appointment is necessary this should be arranged by the Liaison Officer and an appointment card should be given to the patient before he/she leaves the emergency department.
If the patient is to be admitted to the hospital the Liaison Officer will check the availability of a bed and arrange for the patient to be transferred to the appropriate ward, escorted by a runner with his/her medical record.

If a bed or the service required is not available at the hospital, the Liaison Officer will contact other facilities or the Regional Emergency Command Centre (if available) to identify a hospital with the capacity to provide care to the patient and will facilitate referral following agreed protocols. If the service is not available in another facility the patient must be kept in the hospital to receive treatment.

B) Emergency Case Management Human Resource Needs

A case team comprised of clinical and support staff will provide emergency services. Table 1 describes the minimum human resource needs of the Emergency Case Team.

NB: some of the personnel described in Table 1 below (such as Specialists, Social Worker) may also be part of the Inpatient Case Team, however they should be readily available to provide support/consultation to the Emergency Case Team whenever required. The Emergency Case Team should have ready access to the Liaison and Referrals Service.

Table 1 Human Resource Needs for Emergency Services

Clinical	Non-Clinical
General Practitioner/Health Officer Professional/Clinical Nurse for: ✓ Triage area ✓ Resuscitation area ✓ Observation area Specialists ✓ Emergency physicians ✓ Emergency nurse practitioners ✓ Critical care nurse ✓ Internist, ✓ Pediatrician, ✓ Surgeon, ✓ Obstetrician and gynecologist ✓ Orthopedic surgeon ✓ Neurosurgeon ✓ Psychiatrist Pharmacist/Druggist Lab Technologist/Technician Imaging Personnel	Cashier Data clerk Runner/patient assistant Cleaner Security Social Worker

C) Emergency Case Management Equipment and Supply Needs

Each triage and treatment room should be equipped with equipment and supplies needed to provide care. Table 2 presents a list (not exhaustive) of items that should be available in the emergency department for patient treatment and care. Each hospital should conduct its own assessment to determine other items in addition to those described in Table 2 below.

Table 2 Equipment and Supply Needs for Emergency Services

Equipment and Furniture	Supplies
Stretcher Wheel chair Office furniture Screen Diagnostic kits Resuscitation tools –adult/paediatric Examination beds Short stay beds Refrigerator Weighing scale IV stand	Emergency Drugs Cleansing agents/chemicals Antiseptics/Disinfectants Dressing materials Stationary Personal Protective Equipment

Procedure kits Lab equipment Mobile X ray (Optional for Primary Hospitals) Ultrasound Monitoring machines Electrocardiogram Oxygen cylinder with accessories High power mobile lamps Telephone Computer Wall clock Radio apparatus =Walky-talky	

3.5 Ambulance service

Hospitals should have in house ambulance/Emergency patient care and transportation service/ for inter- hospital or inter facility transfer of patients and whenever there is need for advanced life support to be deployed to assist the pre hospital providers. The ambulance has to serve only for emergency patient transport and management. All ambulances in hospital has to be equipped with equipment and supplies to render minimum Basic Life Support/BLS/, Advance Life Support/ALS/ and trained ambulance drivers. Hospitals' caseloads and availability of ambulance access areas should determine the appropriate number of ambulances in hospitals, including those used for non-emergency patients. In Hospital ambulances should be managed by liaison service.

3.6 Hospital disaster preparedness and responses

Disaster is a serious disruption of a household, community, ecosystem or society that results in human, material, economic or environmental losses which exceeds the ability of those affected to manage, using their own resources.

A disaster response is treating any acute event, natural or man-made, in which patients, acutely or chronically ill or injured have medical needs, which exceed available resources, resulting in patients receiving inadequate or even no care. NEEDS < RESOURCES. Health facilities have to prepare to disaster when it occurs in the hospital, in their own jurisdiction and for assistance of neighboring regions and/or for national response.

Hazard is potentially damaging physical event or action that may harm people, their economic assets, infrastructure and environment. Hospitals must plan for both internal and external disasters. Effective planning is essential for an optimal preparedness and response to disasters by hospitals based on the identified Hazard vulnerability analysis.

A National or regional incident command system will integrate activities and resources to guide healthcare facilities' response to disasters. All hospitals should have an emergency/disaster

response coordinator to oversee hospital disaster preparedness and response, training and implementation.

When there is a significant health impact from a disaster, hospitals may face demands that place enormous strains on their capacity. It is therefore essential that all hospitals have plans in advance in place to cope with an unexpected influx of patients.

Disaster preparedness and response plan uses all hazards, all agencies, and comprehensive approaches and focuses the importance of careful planning. For detail information, please see the *National Disaster Health Preparedness and Response Guideline, 2015*

Section 4 Implementation Checklist and Indicators

4.1 Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Emergency Medical Services have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in Appendix E of *chapter 20 Monitoring and Reporting*.

4.2 Implementation Checklist

The following Table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. This tool is not meant to measure attainment of each Operational Standard, but rather to provide a checklist to record implementation activities.

Table 3 Emergency Medical Services Checklist

		Yes	No
1	There is a functional emergency triage service.		
2	A Director for Emergency Medical Services is assigned to oversee all activities conducted in Emergency Department/Unit.		
3	There are personnel trained in triage processes working in the emergency triage.		
4	Bed occupancy information is gathered and reported.		
5	Available medication, supplies and equipment checked prior to each shift		

4.3 Indicators

In addition, the following indicators may be monitored on a regular basis to assess the effectiveness/outcomes of implementation of the recommendations provided in this chapter.

Table 4 Emergency Medical Services Indicators

No	Indicator	Formula	Frequency	Comments
1.	Number of ER attendances	Total number of ER attendances	Quarterly	
2.	a) Number of emergency inpatient admissions b) % of total admissions	a) Total number of ER inpatient admissions b) Total number of ER inpatient admissions/total number of admissions *100	Quarterly	
3.	ER wait time to triage [Average time from arrival at the emergency department to initiation of triage (minutes);]	Σ triage wait time/number of attendances	Quarterly	HMIS indicator
4.	Emergency room patients triaged within 5 s of arrival	Number of surveyed patients who undergo triage within 5 minutes of arrival in emergency room ÷ Number of patients included in emergency room triage time survey x 100	Quarterly	
5.	Emergency room attendances with length of stay > 24 hours	Total number of attendances who remain in emergency room for more than 24 hrs. ÷ Total number of emergency room attendances x 100	Monthly	
6.	The percentage of emergency drugs made available in the emergency crash cart at any time within 24 hours.	Total number of emergency drugs made available within the crash cart/Total number of drugs expected to be made available in the crash.	Daily	
7.	Emergency room mortality	Number of deaths in emergency room from patients who were alive (i.e. any vital signs present) on arrival ÷ Number of emergency room attendances x 100	Monthly	

Source Documents

1. Federal Ministry of Health. National Liaison and Referral Manual. Unpublished. Federal Democratic Republic of Ethiopia Ministry of Health. (2008). *Curative, Rehabilitative and Treatment Sub-Business Process. The New General and Specialized Hospital Business Process Study Report*. Addis Ababa, Ethiopia.

2. Federal Democratic Republic of Ethiopia Ministry of Health. (2009, November). *Guideline for Implementation of a Patient Referral System in Ethiopia*. Addis Ababa.

3. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, October). *Patient Flow: A Manual Prepared for Heads of Hospitals and Service Providers.* Addis Ababa, Ethiopia

4. WHO. (2016). *Pocket Book of Hospital Care for Children. Guidelines for the Management of Common Illnesses with Limited Resources.* Geneva: World Health Organization.

5. World Health Organization. 2016. Updated guideline: paediatric emergency triage, assessment and treatment. Geneva: World Health Organization.

6. Federal Ministry of Health. Ethiopian Hospital Reform Implementation Guidelines (EHRIG). May 2010. Addis Ababa, Ethiopia.

7. Federal Ministry of Health. The National Admission and Discharge Protocols for Ethiopian Hospitals. July 2012. Addis Ababa, Ethiopia.

Appendices

Appendix 1 Emergency Triage Format

Arrival Date _____

1. **Patient Name** _____**Card No**._____ **Age** ___**Sex** ___**Address** _____

2. **Time of Illness/accident** _____ **Time at arrival to ED** _____ **Triage time** ___ _____

3. A. **Mode of arrival to the Hospital/ED -** Ambulance ☐ Private car☐ Walking☐ Carried ☐ Taxi☐

B. **Origin of Referral**– Government Hosp ☐ Private Hosp ☐ Health cent ☐ Police ☐ Self ☐

4. **Pre-Hospital care/First aid given** Yes ☐ NO ☐

5. **Chief Complaint** _____

A. Non trauma - Chest pain☐ Fever☐ Diarrhea/Vomiting ☐ Headache☐ Sudden collapse☐ poisoning☐ Convulsion☐ Respiratory problem.☐ Abdominal pain ☐ others_____

B. **Trauma** - RTI ☐ Fall accident ☐ Suicide ☐ Gunshot ☐ Stab ☐ Burn ☐ Foreign body swallow ☐ other specify _____

C. **Ob/Gyn -** Vaginal bleeding ☐ Labor pain ☐ Lower abdominal pain ☐ seizure ☐ other specify _____

6. **Past Medical illness** _____

7. **History of allergy** No ☐ Yes ☐ (specify) _____

8. **Vital sign recording** BP_____ RR _____ HR _____ T _____ SpO2_____ RBS_____

9. Condition on arrivalModified Early Warning Score (MEWS)

Score	3	2	1	0	1	2	3
Mobility				Walking	With help	Stretcher/immobile	
HR		≤ 40	41-50	51-100	101-110	111-129	>129
RR		≤8		9-14	15-20	21-29	>29
Spo2				≥94%	90-94%	≤90%--- (not for CO poisoning)	
Temp		≤35.0		35.1-37.2	37.3-37.9	≥38.5	
CNS/AVPU		confused		Alert	Respond to voice	Respond to pain	Unresponsive
SBP	≤70	71-80	81-100	101-199		≥200	
Trauma				NO	YES		
Pain score				No pain	1—3/10	4—7/10	≥ 7/10

Total MEWS score _____

Determine Triage Color

Triage Score	**>7**	**5-6**	**3-4**	**0-2**	
Presentation	* Seizure (current) * Burn (face/inhalation) * Hypoglycemia (Glu<3)	* Reduced consciousness * Seizure (post-ictal) * Acute focal neurology symptoms * Psychosis/aggression * Burn (>20%, electric, chemical, circumferential) * Hemorrhage (uncontrolled) * Pregnant + abdominal trauma / pain * Threatened limb OR * Compound fracture.	* Burn (other) * Hemorrhage (controlled) * Closed fracture * Minor dislocation * Pregnancy + vaginal bleeding * Pregnancy + non-abdominal trauma * DM (Glucose>17 no ketonuria) * Abdominal pain (acute)	All other patients	Dead on arrival **(BLACK)**

		* Major dislocation (not finger/toes) * Diabetic &Glucose > 11 with ketonuria * SOB or Chest pain (acute) * Coughing blood OR Vomiting blood * Poisoning / Overdose	* Vomiting (ongoing, no blood)		
Pain	--	Severe	Moderate	Mild	

10. **Assessment**- Red ☐ Orange ☐ Yellow ☐ Green ☐ Blue/Black ☐

11.**Transfer to**- Resuscitation room ☐ procedure room☐ Waiting room ☐ Regular OPD ☐ Home ☐

12. Treatment and investigation on triage _____

13. **Triage Officer Name** _____Sign_____

Appendix 2 Resuscitation minimum equipment's and supplies list

Basic

Airway equipment,

Oxygen system-cylinder, concentrator, face mask, nasal prong, flow meter

Suction machines

Intravenous set/cannula and fluids,

Emergency and analgesia drugs

ECG machines,

Non-invasive ventilation (NIV)

Foley catheters

Chest drain sets

Tracheotomy sets

Tubes; NG, Rectal,

Wide bore needle/cricothyrotomy / optional for primary hospital/

Defibrillator,

Monitors

Ventilator –optional for primary hospital

Intubation sets

Anesthesia drugs

Portable X-ray facilities

Portable ultrasound devices

Intraosseous needles and drill

Central lines

Appendix 3 General minimum Equipment and Supply Needs for Emergency unit/departments

1. Equipment and Supplies

The basic equipment and supplies needed for effective running of the Emergency Department or Unit are listed below:

1.1. Airways/Breathing

- Bag valve mask:
- Chest tube / underwater seal drainage
- Combitube
- Elastic gum bougies
- Endotracheal tube, ET
- Laryngeal Mask Airway
- Laryngoscope, various size s of blades
- McGill forceps
- Nasal prongs
- Nasopharyngeal airways
- Nebulizers
- Oropharyngeal airways
- Oxygen cylinder with a flow meter
- Suction machines and tubes
- Thoracotomy set
- Tongue depressor
- Tracheostomy set
- Transport Ventilators
- Ventilator (ICU)- optional for primary hospital
- Ventury airway mask/ poly mask
- Yankeur suction

2. **Circulation/Hemodynamics**

- 12 lead ECG machine
- Blood and fluid warmer
- Central venous catheters
- Cut-down set 1 (phased out)*
- Defibrillator/ Automated External Defibrillator (AED)
- Foleys catheter
- High capacity catheters
- Infusion pumps
- Intraosseous Needles
- IV cannula 14, 16 18 20 and 22
- Syringe pumps

3. **Splints**

- Bandages
- cervical collar –soft/hard collar
- POP
- Spine board
- Splints (specify the types needed)
- Trac 3 traction kit*

4. **Monitoring Devices**

- Pulse oximeter
- Patient Monitors (invasive and noninvasive)
- Glucometer
- Blood gas electrolyte analyzer
- Spirometer/ peak flow meter
- Thermometer
- Diagnosis set

- Stethoscope
- Sphygmomanometer (Digital & Aneroid)

5. Other Emergency Equipment

- Bradlow tape measure (for children)
- Weighing scale
- Telephone and directory
- Pedal operated color-coded waste bins
- Safety box for sharps
- Blood fridge
- Cabinets
- Computer and accessories and appropriate software
- Consumable cabinet
- Drug cabinet
- Examination couch
- Examination lamps
- Hoist
- Instrument trays
- Office furniture
- Refrigerator
- Resuscitation trolley/tray
- Rollers
- Stretchers
- Suction machine
- Telephones
- Trolleys
- Wheel chairs

Diagnostic

- Blood gas/electrolyte analyzer
- Mobile X-ray machine
- Diagnostic set
- Diagnostic Peritoneal Lavage set
- Glucometer
- Laboratory sample set
- Lumber puncture set
- Minor surgical set
- Fetal heart monitor
- Hand held Doppler machine
- Suprapubic catheter sets
- Ultrasound machine

Medicines

Essential medicines needed for effective running of Emergency are listed below:

- 50% Dextrose
- Adrenaline
- Nor-adrenaline
- Anti-snake venom serum
- Aspirin
- Atropine
- Anti-Tetanus Serum
- Dextran/ voluven
- Diazepam
- Dobutamine
- Etomidate
- Fresh Frozen Plasma

- Gelofusin
- Group O negwhole blood
- Heparin
- Hydralazine
- Hydrocortisone
- Glucagon,IM
- Insulin
- IV calcium Gluconate
- IV Dopamine
- IV Fluid - all type
- IV Frusemide
- IV KCl
- IV Vit K
- Labetalol
- Lignocaine
- 10% xylocaine spray
- Magnesium Sulphate
- Mannitol
- Midazolam
- Morphine
- Naloxone
- Nitroglycerine
- Oral Rehydration Salt (ORS)
- Oxygen supply
- Pethidine
- Phenylephrine
- Propofol

- Salbutamol
- Sodium bicarbonate
- Suxamethonium

Crush cart drug and supplies list that has to be available all times 24hrs, 365 days a year

S.N	Item	Availability	%	
	Drugs			
1.	Adrenalin			
2.	Atropine			
3.	Dopamine			
4.	Ventolin puff			
5.	Hydrocortisone			
6.	Anti-histamine			
7.	Diazepam			
8.	Analgesics			
9.	IV fluids			
10.	40% glucose			
11.	Regular insulin			
	Supplies			
1.	Oral airway different size			
2.	O2 administration nasal cannula			
3.	O2 administration face mask different size			
4.	Ambu bag diff. size with 3 diff. size masks			
5.	O2 concentrator and o2 full cylinder			
6.	IV cannula			
7.	Glucometer with adequate sticks			
8.	Pulseoximetre			
9.	Suction machine functional with suction tubes			
10.	Dressing and suturing materials			

11.	Intubation set where applicable			

4

Outpatient Services Management

Table of Contents

Abbreviations

CO	Chief Clinical Office
ECG	Electro cardiograph
HMIS	Health Management Information System

JD	Job Description
MD	Medical Director
MRN	Medical Record Number
OPD	Outpatient Department
IPPS	Infection Prevention and Patient Safety
ROPD	Regular Outpatient Department
TB	Tuberculosis
TV	Television

Section 1 Introduction

Hospital outpatient services management refers to the processes and procedures needed to ensure the efficient flow of patients between outpatient services and providing quality health care to clients. Efficient flow of patients requires various inputs including human resources, infrastructure, equipment, protocols and pathways. Properly designed and implemented patient flow will reduce patient waiting times, increase provider efficiency and staff/client satisfaction, proper resource utilization as well as improve overall quality of care. This chapter details the inputs and process required to ensure well-organized patient flow at the outpatient department and describes the flow of services from the patient's first encounter with the reception service at the entrance of the hospital until the patient exits the outpatient department.

Section 2 Operational Standards for Outpatient Services Management

1. The Hospital has established management structures and job descriptions that detail the roles and responsibilities of each discipline within services/departments/units, including reporting relationships.
2. The hospital has well-equipped service specific OPD rooms with necessary equipment and supplies as per hospital tier level of care.
3. The hospital has established outpatient specific diagnostic laboratory, radiology, and pharmacy service units.
4. The hospital has an outpatient department waiting area with adequate lightening, ventilation and multimedia facilities.
5. The hospital has an OPD staffed with adequate and appropriately trained personnel and OPD service rooms are managed by at least a GP and specialty clinics by a service specific specialist/ sub- specialty clinic by sub specialist as per hospital tier level of care.
6. Outpatient department (OPD) specific central triage procedure is established to ensure efficient patient flow; and seek to reduce patient crowding.
7. The hospital has established OPD patient appointment and queuing management systems.

Section 3 Implementation Guidance

3.1. Outpatient Organizational Structure

The hospital's outpatient services should be organized in clinical teams according to the clinical services provided by the hospital. The outpatient department will be led by full time outpatient director / outpatient case team manager with nurse coordinator and will be accountable to the hospital's CCO/MD. The outpatient directorate/case team manager will have an office with office furniture's, secretary, plan, report and evaluation system.

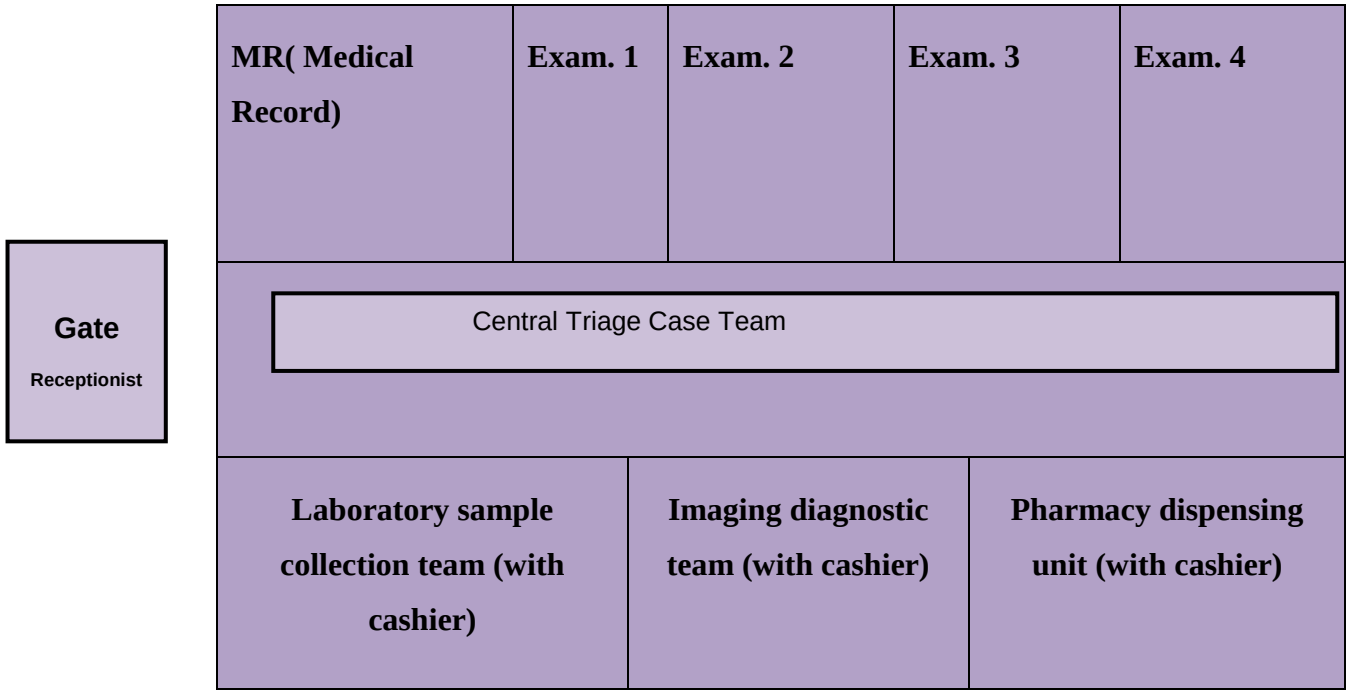
3.2. Outpatient Service Layout

Outpatient Services should be organized in a manner that reduces the length of time that it might takes a patient to travel from one service area to another. Although each facility has a different layout and plan, clinical services should be organized as close to one another as possible. Outpatient services consist of

a) Central triage and patient waiting area
b) Medical Record Room
c) Examination(clinical assessment) room, sample collection and treatment rooms
d) Pharmacy dispensing unit and cashier
e) Laboratory team, with cashier
f) imaging diagnostic team, with cashier

A possible layout of outpatient services is presented in Figure 1 below:

Figure: 1 Sample Layout of Outpatient Services



3.3. Central Triage

A. Central Triage Pathway

The central triage is the first point of patient contact in outpatient services. The central triage infrastructure should include a waiting area with adequate seats, registration and clinical assessment areas.

Patients will be directed to Central Triage from the reception service or Emergency Department. Within Central Triage the patient will undergo a triage assessment and all relevant administrative processes (registration, medical record retrieval, payment etc) will be conducted. The triage assessment will assign each patient to appropriate case team (emergency, ROPD, specialty and sub- specialty clinic or back referral with appropriate counseling. The patient will then be directed to the relevant case team and his/her medical record will be delivered to the case team by a runner. Possible flow of outpatient services is shown in Figure 2 below:

B: **Central Triage Activity**

The central triage should be open during regular working hours. All patients should undergo Central Triage using guideline EXCEPT:

- Emergency cases (should immediately attend emergency department),
- Laboring mothers (should immediately attend delivery unit),
- Those with an appointment (should immediately go to relevant case team), and
- Private wing patients

The first step in Central Triage activity is aiming in identifying and treating emergency signs. The Triage Officer should identify patients who would be more appropriately treated by the emergency case team and after resuscitation, should transfer these patients to the emergency case team. If a patient does not have an emergency condition, the Triage Officer should then determine the nature and urgency of the client's medical problem and determine the appropriate service/case team required by the patient. If the service is available the patient should be transferred to the appropriate case team or given an appointment for the next available date while a referral should be arranged to another facility for services not available in the hospital. When scheduling appointments for the same, or a future date, staff should take all relevant patient information into account, including:

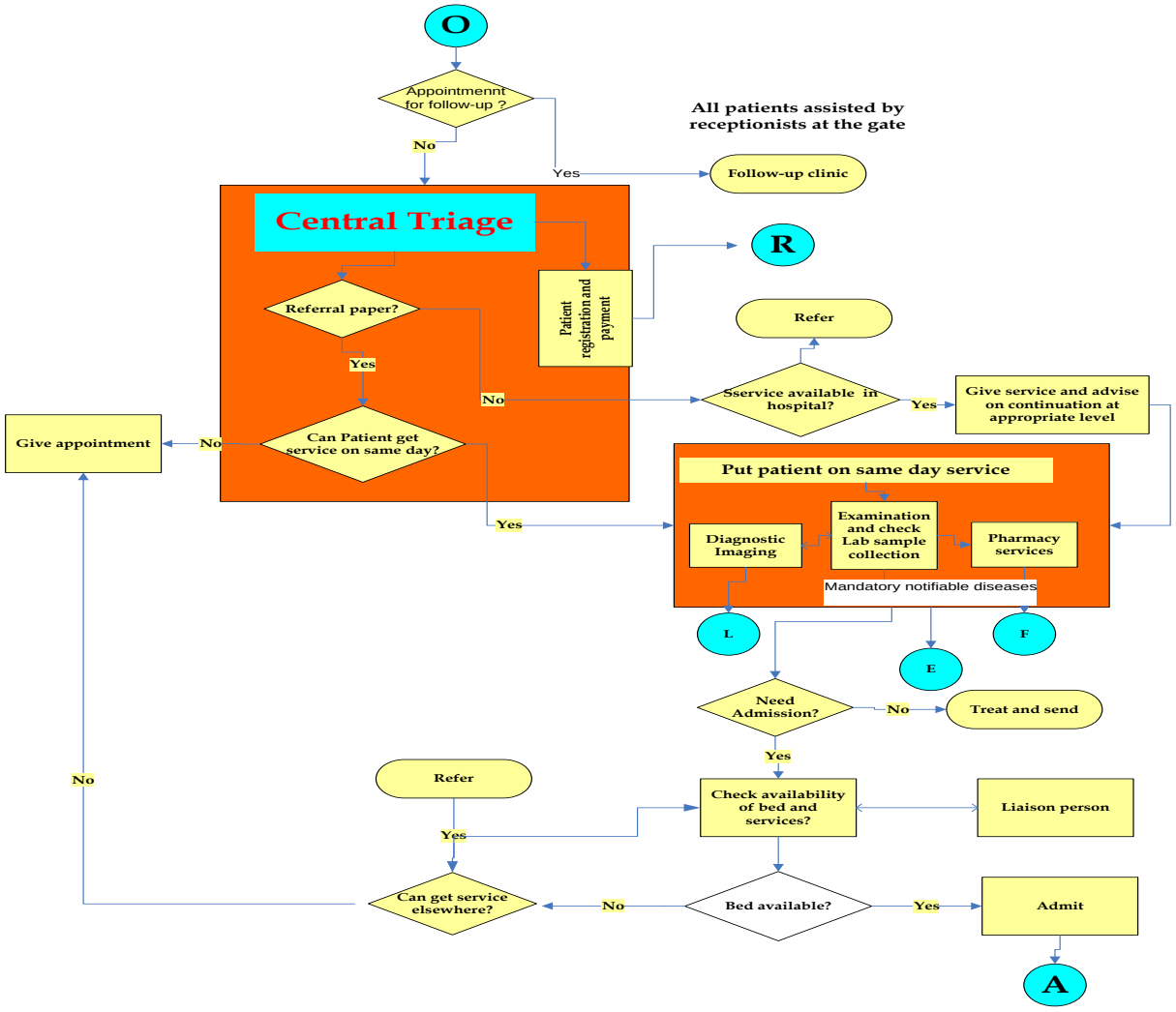
- The severity of the condition
- Geographic/Distance travelled by patient/
- Financial status of patient (for example financial difficulties that could prevent the patient returning to the hospital at a future date taking into consideration transport and/or hotel costs
- Social circumstances of patient (for example loss of income due to absence from work, childcare needs of dependent children and etc.).

The criteria by which a patient is given priority for treatment should be written and visible to patients and staff to ensure transparency in the process.

If the patient can receive services on the same day he/she will complete all necessary registration and payment requirements in medical record management unit and then be directed to the relevant outpatient case team.

If the appointment is scheduled for a future date, the patient will complete all necessary registration and payment requirements in medical record management unit, given an appointment card and advised to report to the appropriate case team on the date of their appointment, without undergoing Central Triage again. The hospital should have a clear management system to for isolating patients with communicable diseases like patients having chronic cough and suspected of TB. The hospital should also have a separate waiting area for children and adults.

Figure 2: Typical Pathway for Outpatients Service



A: Inpatient service flow **D**: Discharge service flow **DR**: Delivery service flow: **DI**: Diagnostic Imaging Service flow **E**: Epidemic notification flow **ER:** Emergency Service flow **F:** Pharmacy service flow **L:** Laboratory service flow O: Outpatient service flow **R**: Registration service.**Source:** Federal Democratic Republic of Ethiopia Ministry of Health. (2008). *Curative, Rehabilitative and Treatment Sub-Business Process. The New General and Specialized Hospital Business Process Study Report.*

C) **Central Triage Human Resource Requirements**

The Central Triage Case Team consists of both clinical and non-clinical staff. Ideally, triage should be carried out by a General Practitioner. However, depending on the availability of human resources, it can be conducted by a Health Officer or BSc Nurse. Non-clinical members of the Central Triage case team include runners, cashiers, registrars/ clerks and cleaners. The runners are responsible to facilitate the registration of patients and to transport patients as needed. The Central Triage Case Team should have ready access to the Liaison and Referrals Service.

D) **Central Triage Equipment and Supply Requirements**

The Central Triage should have sufficient equipment and supplies for the patient workload.

The following is a list of the minimum items that should be available for Central Triage:

- triage room at least with two office furniture
- Examination bed x 2
- Thermometer x 2
- Adult & Pediatric stethoscope
- Adult & Pediatric sphygmomanometer (automatic or manual)
- Adult weight scale
- Resuscitation tools
- Electrocardiogram (ECG) **(for general and tertiary hospitals)**
- Pulse oximetry
- Wheelchair
- Stretcher
- Screens, partitions or separate rooms
- Gloves, face masks and other personal protective equipment
- Wall clock(s)
- Microphone/PA system

3.4 Outpatient Service Activity

The outpatient case team will take a history, examine the patient and record the findings. If diagnostic laboratory or imaging tests are needed, a request filled with all the necessary information (as per the laboratory standard) and the patient has to be sent to the respective departments guided by a runner. A note entered to the patient card should include at least pertinent history, physical examination and pending or completed laboratory/imaging findings pointing to the patient diagnosis. If diagnostic or therapeutic procedures as lumbar puncture, abscess drainage etc are required, it has to be performed within the outpatient department. The results of any investigations and treatment options should be explained and discussed with the patient and should be clearly documented on the patient card.

If the patient needs consultation with Specialist (intra or interdepartmental) this should, as far as possible, take place on the same day. A consultation request form should be completed and this should be given to the appropriate Specialist together with the patient's Medical Record. A sample Consultation Request Form is presented in Annex.

If medication is required the patient should be directed to the pharmacy dispensing unit from where he/she will make payment (if necessary) and obtain the necessary drugs and appropriate counseling.

Any minor procedures that are required (such as dressings change or injections) should be carried out in the outpatient department.

If the patient needs to be admitted to hospital or be referred to other hospital, he/she will be guided to the Liaison office with the help of runner for admission or referral arrangement.

Sample collection, procedure and payment area within the OPD should be easily accessible to all OPD patients and should have sufficient staff to prevent delay. Runners are responsible to facilitate patient registration, transport patients (if needed), transport samples from the collection area to the laboratory unit and back results to the clinical case team (if needed).

The Diagnostic Imaging department should be located in close proximity to OPD and every patient who requires imaging services should be directed there with the assistance of a runner, if necessary.

The hospital should ensure documentation of all HMIS diagnosis in to the HMIS register daily and complete, correct and timely reports have to be compiled and sent to the plan and monitoring or other units.

A. Human resource needs for Outpatient

- Outpatient Director / outpatient case team manager
    - Organize and lead the outpatient service as per the national standards and treatment guidelines
    - Ensure the availability of adequate human power and equipment's for outpatient services.
    - Plan, budget and report the outpatient activities
- Nurse coordinator
    - Coordinate the outpatient nursing service
    - Plan the necessary supplies, drugs and equipment's for patient care
    - Coordinate and Monitor daily recording of all patient diagnosis in to the HMIS register
    - Monitor and evaluate the implementation of outpatient specific nursing standards
- General medical practitioner per discipline (Internal medicine, pediatrics, surgery, gynecology and obstetrics) to run the regular outpatient service for eight hour in each working hour
    - Examine and treat a patient
    - Plan, document and report daily activities
- Specialists or sub specialist per discipline (specialty) to run the respective specialty and sub specialty clinic services assigned
    - Examine and treat a patient at a specialty follow up clinic
    - Plan, document and report daily activities
- Nurse should be assigned at outpatient unit as per patient load
    - To deliver the complete nursing care
    - Record all patient diagnosis in to HMIS register
- Adequate number of laboratory, pharmacy and imaging workers
- Runners
    - To assist patients on every outpatient activities

    - To collect lab and imaging results from the respective unites
- Cashier
    - Collect daily cash from outpatient service users
    - Number of cashiers and windows should depend on the case load
- Cleaner,
    - Clean and protect the outpatient facilities as per standards
- Phlebotomist,
    - Collect samples from patients and deliver to lab units
- Security guards will be assigned based on the hospital context.
    - Will safe guard the patients and staff and visitors

B. Outpatient case team equipment and supply needs

Each case team room should be equipped with equipment and supplies needed to provide care. The following (Table: 1) is a list of suggested items that should be found in the case team room. It is not an exhaustive list of all possible equipment and supplies, but should be used by each facility as a guide when determining equipment needs.

Table 1: Equipment and Supply Needed for Outpatient Services

Equipment and Furniture	**Supplies**
Examination bed, Chairs and tables , Stretcher, Wheel chair, Stethoscope, Sphygmomanometer (automated or manual), Otoscope, Ophthalmoscope, Thermometer, Weight and height scale, Measuring tape, Screen for patient , examinationSteam sterilizer, Minor procedure kits, Computer and Communication materials (TV....)	Patient forms: • History and examination sheets • Consultation request form • Referral form • Laboratory, X ray request form Prescription pads Sample collection supplies Dressing supplies Personal protective equipment

C. Procedure room at outpatient clinic

The outpatient clinic should encompass a procedure room where diagnostic and therapeutic minor procedures and tests can be performed and where simple bedside tests can be carried out.

The procedure room should be staffed and equipped with: nurse, cleaner, dressing set, minor OR set, hand washing facilities, coach, IV stand, IPPS materials. The infrastructure at the outpatient clinic should facilitate easy access way to treatment services for differently abled people and other people in need of special help.

D. Waiting Area at outpatient clinic

Waiting area of the hospitals should be located closest to the reception and should incorporate the followings:

- Designated, spacious with washable sits and floor
- Natural or mechanical ventilator
- Natural or artificial light sources
- Usher/guide
- Audiovisual corner with TV for educating patients and their families.

Staff assigned at waiting area of the outpatient clinic should be trained on special need training in order to ease their communication between people with special needs, thereby give necessary information (guide) for differently abled people. Supporting devices such as wheelchair, stretcher should also be accessible at waiting area.

The hospital should have a clear management system to for isolating patients with communicable diseases like patients having chronic cough and suspected of TB. The hospital should also have a separate waiting area for children and adults.

Section 4 Implementation Checklist and Indicators

4.1 Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Outpatient Services Management have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in Appendix E of *chapter 20 Monitoring and Reporting*.

4.2 Implementation Checklist

The following Table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. This tool is not meant to measure attainment of each Operational Standard, but rather to provide a checklist to record implementation activities.

Table 2 Outpatient Service Management Checklist

		Yes	No
1.	There is a central triage.		
2.	There are personnel trained in triage processes working in both the central triage.		
3.	Central triage is equipped with necessary supplies and equipment.		
4.	Outpatient appointment system is in place.		
5.	Outpatient department is managed by at least a GP and specialty clinics by a service specific specialist/ sub- specialty clinic by sub specialist as per hospital tier level of care.		
6.	There is a written protocol for admission and discharge of patients.		
7.	There is a written protocol for the referral of patients (receiving into the hospital and referring outside of the hospital).		
8.	There is a referral directory listing which facilities that hospitals can receive patients from or refer patients to.		

4.3 Indicators

In addition, the following indicators may be monitored on a regular basis to assess the effectiveness/outcomes of implementation of the recommendations provided in this chapter.

Table 3 Outpatient Service Management Indicators

No	Indicator	Formula	Frequency	Comments
1.	OPD attendance	The number of new and repeat outpatient visits (including emergencies and specialized clinics such as ART, VCT) during reporting period	Quarterly	HMIS indicator
2.	Number of OPD visits per	Number of outpatient	Quarterly	HMIS

	practitioner per day	visits/(number of OPD practitioners *22*number of months in period)		indicator
3.	OP wait time to triage [Average time from arrival at the outpatient department to initiation of triage (minutes)]	Σ triage wait time/number of attendances	Quarterly	HMIS indicator
4.	OP consultation transit time	Σ time from beginning of OPD consultation to discharge from the facility (following completion of investigations and purchase of any necessary drugs)/ number of attendances	Quarterly	HMIS indicator
5.	% of outpatients indicating that it was easy to find their way around the health facility	The number of outpatients that responded yes to the question on the patient survey "Was it easy to find your way around the health facility?"/total number of respondents*100	Biannual	Survey tool
6.	Outpatient satisfaction score	[sum total of O-PAHC rating scores ÷ [Number of O-PAHC surveys completed]	Quarterly	Survey tool
7.	Outpatient attendances seen by private wing service	Number of new and repeat outpatient attendances at private wing (Q4) ÷ [Number of new and repeat outpatient attendances at public facility (Q3) + Number of new and repeat outpatient attendances at private wing (Q4)] x 100	Monthly	HHPMI
8.	Outpatients not seen on same day	Number of outpatients not seen on same day as registration during the reporting period (Q7) ÷ [Number	Quarterly	Survey tool

		of new and repeat outpatient attendances at public facility (Q3) + Number of new and repeat outpatient attendances at private wing (Q4)] x 100		

Source Documents

8. Federal Democratic Republic of Ethiopia Ministry of Health. (2008). Curative, Rehabilitative and Treatment Sub-Business Process. The New General and Specialized Hospital Business Process Study Report.
9. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, October). *Patient Flow: A Manual Prepared for Heads of Hospitals and Service Providers.* Addis Ababa, Ethiopia
10. WHO. (2005). *Pocket Book of Hospital Care for Children. Guidelines for the Management of Common Illnesses with Limited Resources.* Geneva: World Health Organization.
11. Federal Ministry of Health. Ethiopian Hospital Reform Implementation Guidelines (EHRIG). May 2010. Addis Ababa, Ethiopia.
12. Federal Ministry of Health. The National Admission and Discharge Protocols for Ethiopian Hospitals. July 2012. Addis Ababa, Ethiopia.
13. Federal Ministry of Health. National Liaison and Referral Manual. Unpublished.

5 Inpatient Services Management

Table of Contents

Box A	Operating Theatre
Box B	Intensive Care Unit (ICU)

Abbreviations

BSc	Bachelor of Science
CGQI	Clinical Governance Quality Improvement
CSR	Centralized Sterilization Room
ECG	Electro cardiograph
EHAQ	Ethiopian Hospital Alliance for Quality
JD	Job Description
HR	Human Resource
LP	Lumbar Puncture
MD	Medical Director
MDR	Multi Drug Resistance
MRN	Medical Record Number
MRI	Magnetic Resonant Imaging
MSc	Master of Science
OPD	Outpatient Department
OR	Operation Room
SOPs	Standard Operating Procedure
IPPS	Infection Prevention and Patient Safety

Section 1 Introduction

Patients enter care in to the inpatient service mainly from previous ambulatory care such as referral from outpatients or emergency outpatient department (OPD), home (with an appointment), transferred from inter-department or referred from another facility. The purpose of the inpatient service is to provide safe, secure, active, energetic, comprehensive, interdisciplinary assessment, stabilization, treatment, initiation and services. The goal of the service is to ensure that the patient can resume normal community living as soon as feasible, thereby maintaining independency. The patient stay should be as short as possible without harming patient outcome.

The hospital should maintain an organizational culture that respects value and diversity, cultural competencies, promotes collaboration and team work, encourages professional and personal development of the staff, and commits to providing the highest quality of services.

Section 2 Operational Standards for Inpatient Services

1. The Hospital has established management structures and job descriptions that detail the roles and responsibilities of each discipline within services/departments/units, including reporting relationships
2. IPD specific admission and discharge procedures are established to reduce the unnecessary inpatient length of stay.
3. All admitted patients have medical and nursing/midwifery care plans that describes medical and nursing/midwifery interventions to address their needs. The plans are regularly reviewed and updated as required
4. The hospital implements a minimum of daily multidisciplinary team patient rounds and visit services.
5. The Hospital has IPD service specific facilities as per hospital tier level.
6. The hospital has IPD staffed with adequate and appropriately trained personnel and equipped with necessary equipment and supplies for Inpatient as per tier level of care
7. The Hospital has established guidelines for verbal and written communication about patient care, including verbal orders and patient handover by discipline and between disciplines
8. The Hospital has established procedure for and inter-professional and departmental consultation and transfer of patients' care to ensure continuity of care.
9. The Hospital has a policy for accompanying all patients by appropriately trained health provider/s during out of IPD diagnostic services and transfer between wards/departments.

Section 3 Implementation Guidance

3.1 Inpatient Services Management and Organization

The Director of Inpatient Services should oversee all inpatient activities. Clinical and support staff should be organized into Case Teams by type of Speciality (e.g. Surgery, Internal Medicine, Paediatrics, Obstetrics and Gynaecology). Case Teams should be comprised of specialists, general practitioners, health officers, nurses, runners, cleaners etc. Each Case Team should be led by a Case Team Leader. Pharmacy and laboratory personnel should also form part of inpatient services and should provide support and advice to the Clinical Case teams on individual patient care as the need arises (see Chapter 9 Laboratory Servicesand Chapter 10 Pharmacy Services for more information).

3.2 In-patient Services Layout

Patient wards should be located at close proximity to the emergency and outpatient departments, and should be easily accessible from elevators, ramps or stairways. Each ward should have an adequate number of well-ventilated rooms, functioning set of adequate number of toilets, sinks and showers. If mixed-sex wards are used there should be separate rooms for male and female patients. Similarly, if adult and Pediatric wards are mixed there should be separate rooms for each. Each ward should have a case team station. Wards should be laid out to facilitate collection of samples from patients (i.e. sufficient space around beds, bed screens or curtains to maintain privacy during undertaking of: wound examination, swab collection, etc. Each ward should have a procedure room where minor diagnostic or therapeutic procedures can be performed and simple bedside tests such as urinalysis can be carried out.

Laboratory and pharmacy dispensary services should also be readily accessible to the inpatient wards.

3.7 Inpatient Case Management

3.3.1 Admission process

The hospital should provide 24 hours, 7 days a week and 365 days a year admission and discharge service, including holidays and weekends. All admissions and discharges should be arranged through the Liaison Service following the process described in *Chapter 2*Liaison, *Referral and Social Services.*

The hospital should have a written protocol for the admission of patients that includes all steps to be taken in the admission process including how to arrange admission, and the activities to be

undertaken when the patient arrives on the ward. This should be known by, and adhered to by all relevant staff.

Upon arrival on the ward the patient should be received by a nurse who will initiate the ward admission process, including orientation to the facilities (such as toilet and showers), instructions for care-givers etc.

Receiving nurse should assess all patients/clients' conditions on arrival in the ward and informs the on-duty physician for immediate medical assessment for critically ill patients and within 2 hours for patients with stable conditions.

The nursing process needs to be completed within 8 hours (before the next shift)and all efforts made to ensure patient safety is not compromised with delayed nursing/physician intervention , resulting in improved overall quality of the care patients/clients receive following admission.

Additional to the receiving nurse's assessment, the patient should be assessed by a medical doctor upon arrival on the ward and a History and Physical Examination Assessment should be completed. This should include the immediate management plan for the patient. A sample History and Physical Examination Assessment Form is presented in *Chapter 6 Medical Records Management.*

3.3.2 Inpatient Service Activity

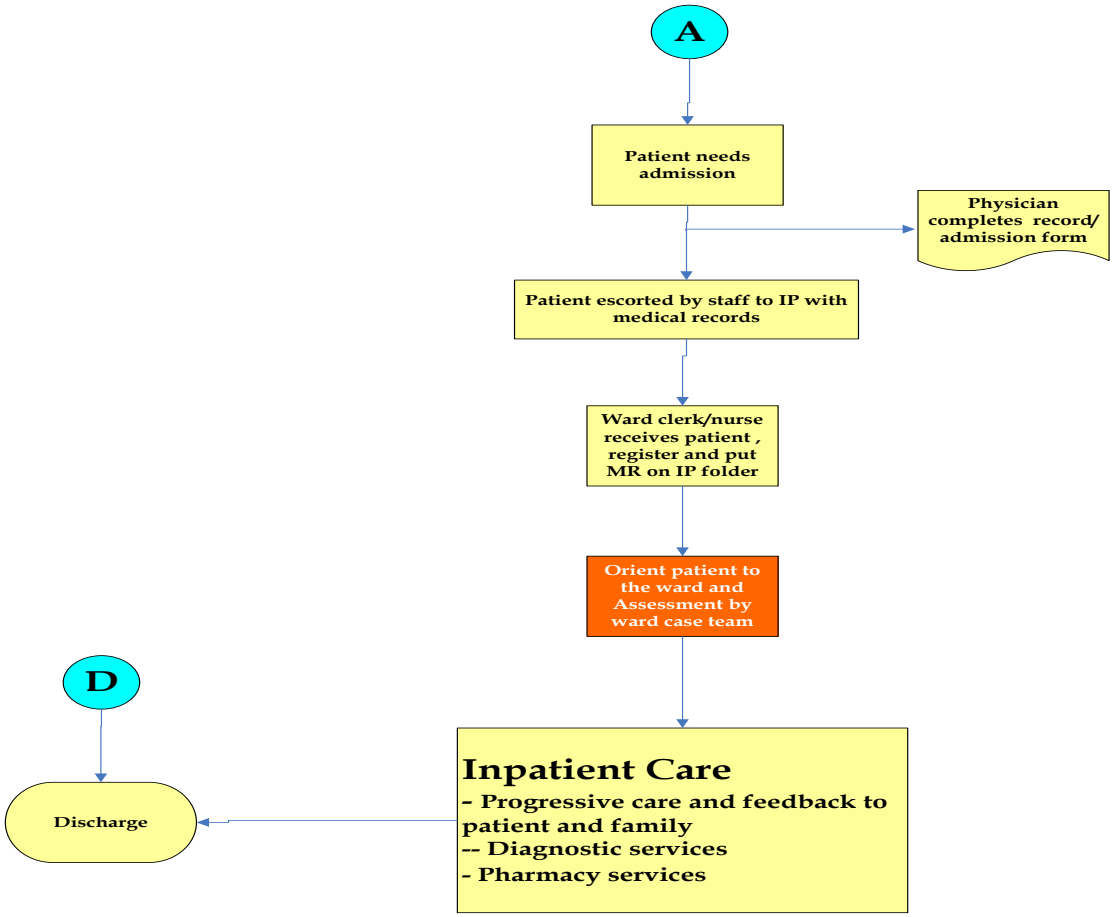
After the initial assessment by the physician, the patient should be reviewed regularly (physicians at least once a dayfor stable patients and two or more times for critically ill patients, and nurses four hourly for stable patients and more often for critically ill-patients) by the relevant Case Team and all clinical contact should be documented in the Medical Record using a hospital Progress Sheet and for nurses/midwives, nursing/midwifery progress sheets.

Further guidance on inpatient nursing care service provision is presented in Chapter 7 Nursing and Midwifery Care Services and the Ethiopian Hospital Alliance for Quality Change Packages 1 and 2 . The latter contains guidance on 8 hour shift working arrangements, nurse rounding and central medicines' storage and medicines' administration.Medications should be administered and documented using standardized formats.

Any required investigations should be ordered on the relevant request forms. Laboratory specimens should be collected from the patient while on the ward by the phlebotomist/laboratory team/competent nurse or physician. If the patient requires an X-Ray or ultrasound investigations he/she should be directed to the relevant department, transported to the department using a wheelchair or stretcher and accompanied by a runner or clinical staff member if necessary.

Samples of all Medical Record Forms, including Investigation Order and Report Forms, Medication Administration Record etc, are presented in Appendix B of *Chapter 6Medical Records Management.*

Figure Typical Pathway for Inpatient Admission.



A: Inpatient service flow **D**: Discharge service flow **DR**: Delivery service flow: **DI**: Diagnostic Imaging Service flow **E**: Epidemic notification flow **ER:** Emergency Service flow **F:** Pharmacy service flow **L:** Laboratory service flow O: Outpatient service flow **R**: Registration service.**Source:** Federal Democratic Republic of Ethiopia Ministry of Health (2008). *Curative, Rehabilitative and Treatment Sub-Business Process. , The New General and Specialized Hospital Business Process Study Report.*

3.3.3 Separate or Isolation rooms

Isolation rooms should be provided for the treatment of potentially infectious patients likeMDR-TB. The room should have negative ventilation, a room with scrub- up facilities and be self-contained, or has en-suite facilities. Separate rooms should be available for patients with

conditions that require separation from other patients e.g. patients who require isolation to avoid visual or auditory sources of distress, as in the case of tetanus management.

3.3.4 Specific Inpatient facilities and services

A) Patient gowns, linen and mattresses- The hospital should ensure there is an adequate supply of clean blankets, bed sheets and patient gowns. The mattresses should be plastic covered and without any holes. Beds have to be made at least every 48 hours, and more frequently, if a need arises. All admitted patients have to wear patient gowns and patient clothes have to be stored in a corner, inside a cabinet, or shelf with sealed partitions, to avoid cross infection.

B) Operating theatre- As part of inpatient services particular attention should be given to the organization of operating theatre activities; Box A presents recommendation on operating theatre management and layout.

Box A Operating Theatre

Management: The Operating Theatre should be under the team leader (or equivalent) of surgical services who is accountable to the Inpatient Services Director.

Layout: For a successful outcome of the operation in terms of healing the wound, decreasing blood loss and controlling pain, the OR should be a place that is comfortable and unobstructed by the movement of other staff. It should have a table that is strong enough to hold the patient and is easy to clean.

The Operating Theatre should have basic services of water, light and medical gasses and an adequate place to store instrument. The number of OR tables depends on the number of beds of the hospital. There should be one OR table for every 25 surgical beds. Ideally, the Operating Theatre should be located on the floor as the surgical ward and should be connected to the ward by the simplest possible route. Preferably the Operating Theatre should adjoin the sterilization units, delivery suites and intensive care unit.

The following service areas are needed in an operating theatre suite:

1. Reception and office area, 2. Transfer area: large enough to transfer a patient from bed to trolley, 3. holding bay: to allow supervision of patients waiting for the OR, 4. Staff changing room, 5. Operating theatre 6. Scrub room 7. Trolley parking 8. Recovery room 9. Specialists 10. Anesthetists 11. Scrub up and circulating nurse 12. Cleaners and 13. Porters.

Equipment and Staff: should be provided as per the national standard for general and specialized hospitals. Pleasesee *Section 6 under Surgical and Orthopedic Care Services of the National Minimum Standards for General Hospital and of the Peri-operative Guidelines.*

The intensive care unit of a hospital should also be given attention. Recommendations on ICU management are presented in Box B.

Box B. Intensive Care Unit (ICU)

The ICU, also called critical care unit, is a specialized unit in a hospital that provides intensive care medicine. Many hospitals have also designated areas for intensive care for certain specialties. Examples include; neonatal, medical, surgical, cardiac etc. The ICU is for critically ill patients who need constant medical attention and highly specialized equipment, to control bleeding, support breathing, control toxemia and prevent shock. Patients come from the recovery room of the operation theatre, from wards, or from emergency or outpatient units.

Management: The management of the intensive care unit should be under the team leader of the respective specialty who is accountable to the Inpatient Director or equivalent.

The layout of intensive care unit depends on the type of intensive care unit that a hospital has.

However, the following points are applicable:

- The ICU should be adjacent to the operating theatre and recovery unit.
- The number of beds should be approximately 1-2% of the total number of beds of the hospital.
- Preferably, the ICU should have a controlled environment with medical gasses and power sources.

Equipment and Staff: should be provided as per the national standard for general and specialized hospitals. For HR, layout, equipment and supplies, please see *Section 3.2.1 under Facilities Management of the Minimum Standards for Specialized Hospitals 2011*,

c) Mental Health Care Services

The hospital should develop and implement written protocols and procedures for the management of inpatient psychiatric care, including the admission, consultation; transfer, discharge and follow up *(please see the Chapter Mental Health Services in the Minimum Standards for Specialized Hospitals, 2011 for further guidance on inpatient hospital psychiatric care)*.

3.3.5 Discharge process

The hospital should establish a written protocol for the discharge of patients stating all the steps to be followed when arranging discharge, including preparation of a discharge summary and handling of the medical record after discharge. In particular, when a patient is ready for discharge he/she should be counselled by a member of the Case Team. Decision for discharge should be made by the treating physician, who should complete a discharge summary. The first

copy of the discharge summary should be given to the patient and the second copy retained in the patient's Medical Record. If the patient was referred from another facility, the discharging physician should also complete the feedback section of the referral form, and a copy also given to the patient to give to the referring health institution.

Patients ready for discharge should be counseled by the attending physician, nurse in charge and clinical pharmacist before discharge. Pre-discharge counseling should include:

- An explanation of the patient's diagnosis, investigation results and treatments given
- An explanation of any medications that the patient should continue to take upon discharge
- Any necessary follow up arrangements
- Any discussion of any 'warning signs' that the patient has to be aware of and for which he/she should seek medical attention

The discharging nurse has to make sure all the necessary registers are filled and administrative duties, including financial issues are settled before the patient is sent to the liaison office

The discharge process should be complete in no more than 2 hours (including administrative issues). The patient with their medical record must to be sent to the liaison office, with the help of a runner. The liaison officer has to check the completeness of all the necessary documents and send the patient home after filling the necessary registers (With appointment card and appointment register filled, if appointment was asked for on the discharge summary sheet).

3.3.6 Patient death

There shall be a policy or a protocol that states the procedure to be followed for dead body care, including how the staff informs the next of kin/family members of the deceased, taking all religious and cultural considerations into account. A death occurring in the hospital should be confirmed by at least an attending physician or any independent practitioner and the nurse giving care. The Inpatient service should have a separate room for '*after death care*'. A death summary should be completed and documented in the patient's medical record, to ensure accuracy and easy retrieval. In case of a need for pathologic examination and confirmation for cause of death, a post mortem examination form should be completed and the body should be transferred to the pathology case team or morgue. Following completion of necessary medical examinations, the

body shall be stored in the hospital's morgue until it is collected by the patient's relatives or other responsible person. If the patient does not have a next of kin, the local authority is responsible for collecting the body. Any unexpected deaths should be reported to and investigated by the hospital's CGQI unit.

3.3.7 Inpatient Service Human Resource Requirements

The actual number of personnel shall be determined by workload analysis using recognizable methods; however inpatient services should be provided by Case Teams comprised of:

- Specialist (s)
- General practitioner(s)
- Nurses
- Pharmacy technicians and pharmacists (clinical and non-clinical)
- Laboratory technologists
- Dietitian
- Porters/runners
- Cleaners
- Cashiers
- Security guards

3.3.8 Inpatient Service Equipment and Supply Requirements

The minimum equipment and supplies for patient wards include:

- beds, mattresses, pillows, linens and blankets
- chairs, tables, and bedside tables
- emergency trolley with resuscitation equipment and emergency drugs
- oxygen, pulse oximeter
- suction machine
- Vital sign and diagnostic Set; sphygmomanometer(s), stethoscope(s), thermometer(s) Fundoscope, Otoscope
- Reflex hammer

- weight scale and measuring tape
- IV stands,bed screens
- trolleys, wheelchairs and stretchers
- personal protective equipment
- Minor Set procedure sets according to the type of ward/case team, dressing sets
- Enema Set, LP set, Catheterization set
- Refrigerators
- Autoclave (at least one, not in central sterilization unit)
- Shelves

3.4 Inpatient Care Communication

The hospital should establish and implement communication guidelines that detail communication among health professionals of the same discipline (nurse to nurse, physician to physician, etc), between disciplines and departments/services regarding inpatient care toensure timely and appropriate inpatient care provision.All discussions, including referrals for inpatient care between nurses and physicians or General Practitioners and Specialists, etc, should be clearly documentedin the patient's records. Clear communication such as task allocation (removal of cannula, catheter etc.), prioritization of patients, and, task ownership, facilitates patient's safety. The ward team should use unified electronic or structured written forms to record all communications with the patient/caregivers, and other healthcare professionals based on relevant national guidance.Good communication among health care providers about patient issues ensures continuity of care, avoids duplication and breaking up of care and is essential for medico-legal reasons.

Inpatient communication guidelines should also include handover of clinical care, multidisciplinary rounds and communication with patients and their relatives/carers.

3.4.1 Handover of Clinical Care

Every hospital will need to develop its own handover policy which requires input from managers, all grades of doctors and the rest of the multidisciplinary team to ensure all groups of

staff are updated with the current patient information. The primary objective of a “hand over” is to provide accurate information about a patient’s care, treatment and services, current condition and any recent or anticipated changes.

Handover of clinical care ismore than just the transfer of information-it is also a transfer of professional responsibilities. Furthermore, handover of clinical care can provide a valuable platform for communication about operational issues that might improve the quality of care to be delivered in the subsequent shift and offers opportunities to spot and mitigate errors. Accordingly, hospitals (wards) should ensure that all staff has access to relevant, accurate and up to date sources of information (written or verbal handover) during the 24 hour cycle. Equally important, jargon related to medication details should be minimized to reduce the risk of misunderstandings.Good handover requires:

- Well- coordinated shift work
- Adequate and fixed time, allowing an opportunity for discussion between the giver and receiver of patient information
- Should be supervised by the most senior clinician present and must have clear leadership.
- Adequate and clear information

Good handover practice also benefits health care providers/doctors in that it helps the development and broadening of communication skills, provides a useful setting for clinical education, can protect the healthcare professional(doctor or nurse) against blame for errors which might occur, and increases job satisfaction by improving quality of care.

3.4.2 Multidisciplinary ward rounds

In the hospital setting the range of professionals involved in the ward round /care of individual patient varies across clinical specialties. It largely depends on the way in which the service is organized in a given inpatient environment. Ward rounds should be conducted by a multi_ professional team (e.g. doctors, nurses, pharmacists, dietician, related health professionals, patient and caregivers). It creates an opportunity to review the patient’s condition and develop a coordinated plan of care and action, strengthens communication channels and builds a team culture, sharing information and joint learning through active participation of all members of the

multidisciplinary team. In contrast, failure to communicate actions and information could result in discontinuity of care or unnecessary repetition of efforts.

3.4.2.1 Communicating with patients

Communicating information in an easily comprehensible manner supports shared management of care with the patient and promotes future patient self-care management at the point of discharge.Healthcare providers should inform the patient/s and their carer/s/relatives about pending ward rounds and prepare for ward rounds with relevant information on diagnostic tests and clinical findings and with whom they can raise questions after the ward rounds**.** Providing clear explanations about symptoms and disease severity, and to answer even the simplest of questions can remove patient's fear and anxiety, and aid recovery. However, all members of the ward-round team should be aware of the immediate environment when discussing patient information and adhere to confidentiality and protect the dignity of the patient.

Section 4 Implementation Checklist and Indicators

4.1 Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Inpatient Services Management have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in Appendix E of *chapter 20 Monitoring and Reporting.*

4.2 Implementation Checklist

The following Table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. This tool is not meant to measure attainment of each Operational Standard, but rather to provide a checklist to record implementation activities.

Table 1 Inpatient Service Management Checklist

		Yes	**No**
1	There is an established inpatient management structure in place.		
2	Inpatient department is managed by an Inpatient Director.		

3	There are job descriptions that detail the roles and responsibilities for each inpatient discipline, including reporting relationships.		
4	All admitted patients have medical, nursing/midwifery care plans.		
5	There established guidelines for verbal and written communication about inpatient care, including verbal orders and patient handover by discipline and between disciplines.		
6	There is a written protocol for admission and discharge of patients.		

4.3 Indicators

In addition, the following indicators may be monitored on a regular basis to assess the effectiveness/outcomes of implementation of the above recommendations.

Table 2 Inpatient Service Management Indicators

No	Indicator	Formula	Frequency	Comments
1.	c) Number of emergency inpatient admissions d) % of total admissions	c) Total number of ER inpatient admissions d) Total number of ER inpatient admissions/total number of admissions *100	Quarterly	
2.	a) Number of elective inpatient admissions b) % of total admissions	a) Total number of elective inpatient admissions b) Total number of elective inpatient admissions/total number of admissions *100	Quarterly	
3.	Number of major surgeries per surgeon	Total number of major surgeries/ total number of surgeons	Quarterly	HMIS indicator
4.	Inpatient days per doctor	Total length of stay in days (sum total of each daily patient census)/number of physicians	Quarterly	HMIS indicator
5.	Inpatient days per nurse	Total length of stay in days (sum total of each daily patient census)/number of nurses	Quarterly	HMIS indicator

6.	Inpatient days per other clinical staff	Total length of stay in days (sum total of each daily patient census)/number of other clinical staff	Quarterly	HMIS indicator
7.	Doctors per bed	Number of doctors/Average number of beds	Quarterly	HMIS indicator
8.	Nurses per bed	Number of nurses/Average number of beds	Quarterly	HMIS indicator
9.	Other clinical staff per bed	Number of other clinical staff/ Average number of beds	Quarterly	HMIS indicator
10.	Bed Occupancy rate	Total length of stay in days (sum total of each daily inpatient census) during reporting period /[number of beds available * number of days in reporting period]	Quarterly	HMIS indicator
11.	Bed Turnover rate	Total number of discharges (including transfer outs and deaths)/average number of beds in reporting period	Quarterly	HMIS indicator
12.	Average length of stay (ALOS)	Total length of stay in days (sum total of each daily patient census) during reporting period /[total discharges + transfer outs and deaths]	Quarterly	HMIS indicator
13.	Delay for elective surgical inpatient admission	Σ number of days on waiting list/number of patients	Quarterly	
14.	Delay from inpatient admission to surgery	Σ number of days in hospital awaiting surgery/number of elective surgical admissions	Quarterly	
15.	Bed Occupancy rate	Total length of stay in days (sum total of each daily inpatient census) during reporting period /[number of beds available * number of days in reporting period]	Quarterly	HMIS indicator

16.	% of inpatients indicating that it was it easy to find their way around the health facility.	The number of inpatients that responded yes to the question on the patient survey "Was it easy to find your way around the health facility?"/total number of respondents *100	Biannual	Survey tool.

Source Documents

1. Federal Democratic Republic of Ethiopia Ministry of Health. (2008). Curative, Rehabilitative and Treatment Sub-Business Process. The New General and Specialized Hospital Business Process Study Report.
2. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, October). *Patient Flow: A Manual Prepared for Heads of Hospitals and Service Providers.* Addis Ababa, Ethiopia
3. WHO. (2005). *Pocket Book of Hospital Care for Children. Guidelines for the Management of Common Illnesses with Limited Resources.* Geneva: World Health Organization.
4. Federal Ministry of Health. Ethiopian Hospital Reform Implementation Guidelines (EHRIG). May 2010. Addis Ababa, Ethiopia.
5. Federal Ministry of Health. The National Admission and Discharge Protocols for Ethiopian Hospitals. July 2012. Addis Ababa, Ethiopia.
6. Federal Ministry of Health. National Liaison and Referral Manual. Unpublished.

6 Medical Records Management

Table of Contents

Pages

Appendix A Inpatient Medication Profile Form
Appendix B Pharmaceutical Care Progress Note Recording Sheet
Appendix C Drugs & Medical Supplies Credit Sales/Consumption Registration Book
Appendix D Inpatient Medicines Consumption Summary Sheet

Section 1Introduction

Medical records management (MRs) is one of the components of health information system that documents information related to a patient generated during patient-to-health care provider encounters at a health care facility. A well-managed medical records system is critical to improve the provision of quality health care services to ensure safe medical practice, efficient and effective services and improve the patient's experience and satisfaction with their medical encounter. A strong medical records system is also equally important to make clinical and public health evidence based practices as well as making informed decisions. In addition, medical records may serve as a reliable source of information for medico-legal issues and medical/ public health researchers.

A well-organized medical recording system ensures the availability of reliable healthcare data in the health system; in which it can serve as an input for the implementation of national health sector transformation strategic plan (HSTP) in particular to the information revolution agenda. Poor data quality management system including incomplete medical recording and reporting practices, lack of information technology and its use, shortage of human resource and professional mix, failure to audit medical records and failure to adhere with existing guidelines and SOPs are the major observed challenges in hospital's medical record management system.

Section 2 Operational Standards for Medical Records Management

1. Unique medical record number is assigned to a patient during his/her first visit of care.
2. The hospital shall have a single unified medical registration unit for all patients' registration.
3. The hospital utilizes paper and computer-based systems to register and retrieve medical records.
4. The hospital avails and utilizes a standard set of formats that comprise a complete medical record for continuum of patient's care.
5. The hospital shall implement and comply with national guidelines to manage access to patient's medical records.
6. The hospital performs medical records auditing, data quality checks, archiving/culling procedures and takes corrective actions on a regular basis.
7. The hospital ensures patient's medical records return from different service units to medical records unit at the end of each service day in accordance with medical record tracing system.
8. The hospital shall automate health information system through implementation of integrated electronic medical record system.

Section 3Implementation Guidance

3.1 Retrieval of Existing Medical Record Number or Generation of New Medical Record Number

When a patient arrives at a hospital, the hospital's primary role is to identify the patient's status as an emergency ornon-emergentcase and to identify, if the patient is a new patient (i.e., has never been given a medical record number (MRN) before at the facility) or a returning patient (i.e. has a MRN at the facility from a previous visit).

Each patient should have one MRN for all visits to the health facility i.e. the MRN generated during the registration process at the patient's first visit to the health facility. Subsequently, the same MRN should be used for all other visits, including outpatient, inpatient and emergency visits.

3.1.1 Master Patient Index

The Master Patient Index (MPI) is a database of patients' name, contact information, registration dates, and the MRN for each patient ever treated at the health facility. The MPI is an essential element of existing, retrieving and generating new MRNs.

Each health care facility should have a MPI. The MPI can be paper-based or computer-based with paper based back up. A paper-based MPI relies on the use of an individual index card. Each MPI card should include the following information:

- Patient's first name
- Patient's father name
- Patient's grandfather name (if available)
- Date of Birth (DOB)/Age
- Sex (Male/Female)
- Address
- MRN
- Date of registration
- Phone number

The index cards should be filled alphabetically by first name. When the hospital learns that, a patient has changed his/her name legally, a cross-index file should be made to identify the initial record with the previous name. The MRN of the original registration should be recorded on the cross-index card.

If a patient changes any other contact details (such as address or telephone number) a new MPI card shall be prepared to replace the original. The patient's name, MRN, date of registration and any other

unchanged information should be transcribed exactly as written on the original onto the new card. The old card should be scored through with the signature of the individual preparing the new card. The new card should be stapled to the top of the old card and both should be filed together so that, the updated information is readily available without losing any prior information. In a computer based MPI, the contact details can be amended directly in the appropriate computer fields.

Manual Paper-Based System: Hospitals' that use a paper-based MPI may purchase vertical file cabinets for filing index cards. The paper-based MPI should be monitored by the MR Unit, at a minimum, every quarter to ensure that the MPI is filed correctly. Each facility must establish a procedure for this activity. Sub-headings may be added in the alphabetized system for common names ("Me" for Meskerems', "Mo" for Mohammed's', etc.).

Computer-Based System: The use of a computerized MPI permits faster retrieval of patients' MRN. Electronic Health Management Information System (E-HMIS) is being rolled out across Ethiopian hospitals that include a computerized MPI component. However, a paper-based card file should also be maintained in case of computer technical failure/downtime. Interruptions in the system can be caused by a variety of factors, including electrical outages or hardware/software problems. Therefore, hospitals should maintain a back-up, paper-based system in order to ensure no interruption in MRN retrieval.

If a computer based system is used in addition to a manual system, similar procedures should be followed for both MR management systems to ensure optimal patient care. Both systems are effective when implemented and used correctly.

3.1.2 Patient Registration

Patient registration is the process of documenting the patient's visit to the facility and assigning a MRN. When the patient arrives at registration, the clerk should ask the patient's name (first, father's first name and grandfather's name) and then look for an existing MRN in the paper-based MPI (i.e., set of index cards) or in the computerized MPI. This should be done whether the patient reports that he/she has been to the hospital before or not.

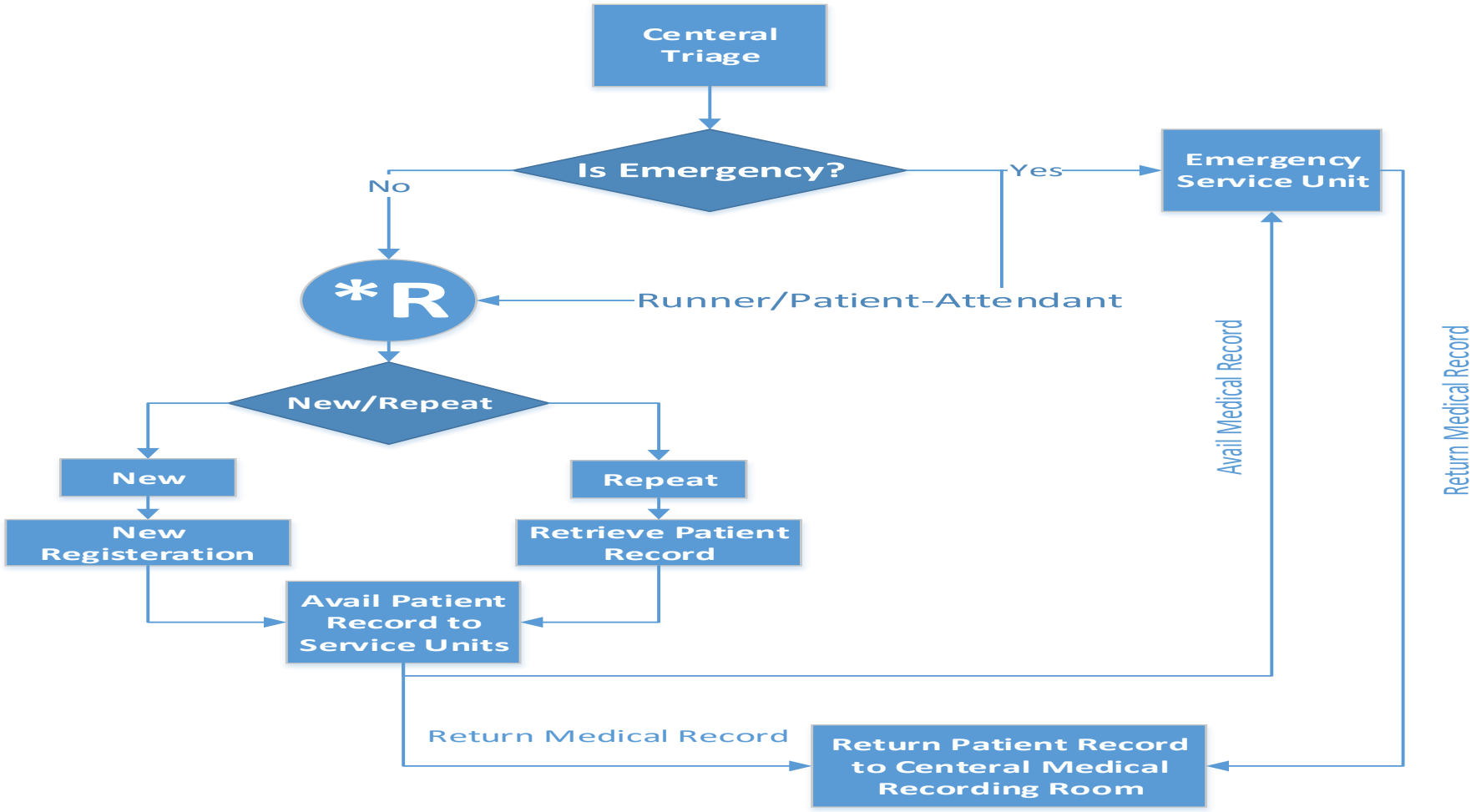
If there is an existing MRNfor that patient, the registration clerk should facilitate the retrieval of the existing MR stored in the record room. The MRU worker should retrieve the patient's MR and then, a runner will take the MR to the area where the patient is to be treated as per the request of health care provider.

If no previous MPI card or MRN can be found, the registration clerk should generate anew MRN. New MRNs should be issued in straight numeric sequence, without skipping any numbers. Each MRN should be assigned to one and only one patient.Reissuinga MRN to another patient should never

occur.Registration staffs should both create a service card and an MPI card for a specific attending client and then finally will give to the client and placed in the MPI box respectively.

All patients regardless of which service they will access should be registered at one central registration site.

Figure 1 Patient registration process and patient card path in a hospital



i.e.* - Registration

All patients/clients regardless of which service they will access should be registered at one central registration site (i.e., the MR Unit).

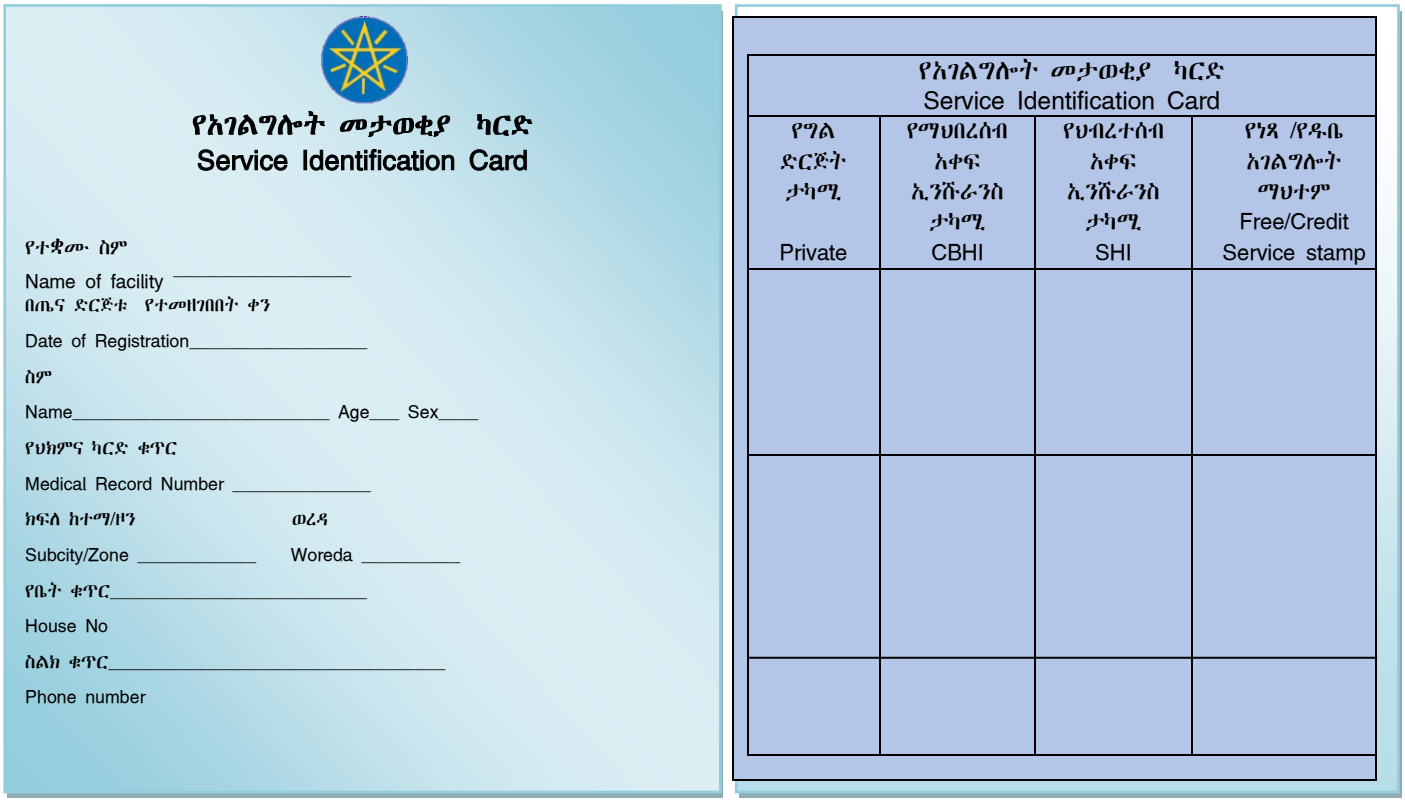
3.1.3 Starting a Medical Record for a new patient

After the MRN is generated (i.e., the next number in the sequence is assigned to the selected patient), an individual hospital-approved folder should be assigned to the patient. Any patient information generated by hospital staff during the period of care should be kept in this folder. A paper fastener or metallic fastening tool should be used to keep all pre-approved clinical documents/forms in the folder. The MRN should be clearly displayed on the folder as a form of identification.

3.1.4 Service Card

Each new patient registered for outpatient or inpatient services should be issued a service card. This card is a small pocket-sized card used as an identification card for each patient, which should be shown to the MR staff whenever the patient attends the hospital. All the necessary registration information should be recorded on the card. Contents of the patient service card include:

Figure 2 A Service Card Template for use in Ethiopian health facilities



የአገልግሎት መታወቂያ ካርድ
Service Identification Card

የተቋሙ ስም
Name of facility _____
በጤና ድርጅቱ የተመዘገበበት ቀን
Date of Registration_____
ስም
Name_____ Age___ Sex____
የህክምና ካርድ ቁጥር
Medical Record Number _____
ክፍለ ከተማ/ዞን ወረዳ
Subcity/Zone _____ Woreda _____
የቤት ቁጥር_____
House No
ስልክ ቁጥር_____
Phone number

የአገልግሎት መታወቂያ ካርድ
Service Identification Card

የግል ድርጅት ታካሚ Private	የማህበረሰብ አቀፍ ኢንሹራንስ ታካሚ CBHI	የህብረተሰብ አቀፍ ኢንሹራንስ ታካሚ SHI	የነጻ /የዱቤ አገልግሎት ማህተም Free/Credit Service stamp

1. Name of the Facility
2. Date of Registration
3. Medical Record Number
4. Name of client
5. DOB or age at registration

6. Sex
7. Client's address
8. Phone number
9. Free service stamp space

3.1.5 Storage of Medical Records

All active MRs should be filed in a single, centralized file room, i.e., the Medical Records Department or Card Room. MRs should be filed numerically according to MRN. If more than one room is needed for file storage, files should be stored numerically (i.e. MRN 1,000-5,000 in one room 1; MRN 5,001 – 10,000 in room 2). Hospitals should audit the files periodically (quarterly or as per hospital policy) to ensure correct filing. All patient files should be stored together, using one MPI, including those from specialized clinics (Eg. ART, EPI etc). If separate record numbers and/or filing systems exist the hospital should integrate these within a single system.

3.1.6 Retrieving existing Medical Record for a returning patient

1. Use the MRN to find the MR.

If the patient knows his/her MR number or brings his Service Card then the MR number can be used to find the patient's MR. The MR is filed numerically in the MR room and hence can be easily retrieved from the shelf.

2. Retrieving a MR by name

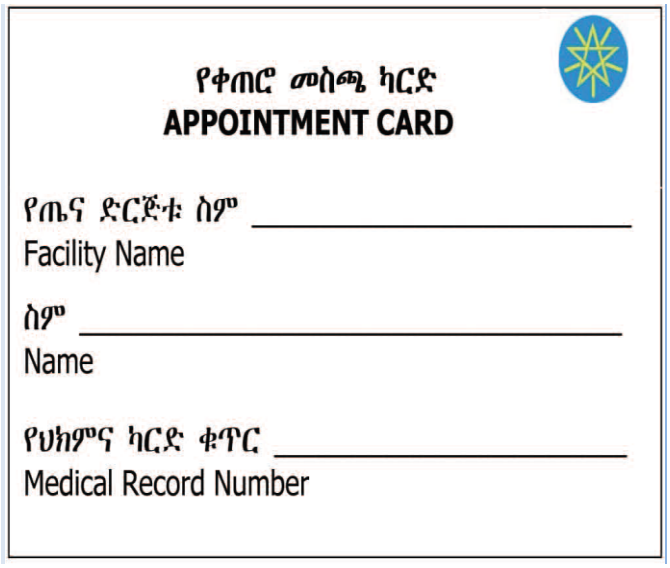
If the patient does not remember their MRN or does not have their service card, then MPI can be used to search for the patient information. The patient's index card is filed alphabetically by first name in the MPI. When the Index Card is located the MR number can be read from the card and used to retrieve the MR then a new service card will be prepared and provided to the client with the appropriate education on the benefit.

3.1.7 Appointment Card

An appointment card should be given to the patient stating the date and time of planned outpatient visits or admission. A template appointment card is presented in Appendix A, Item 3.

Figure 1 below shows the flow of medical record from generation until return of the medical record to the medical record room.

Figure 3 Patient Appointment Card

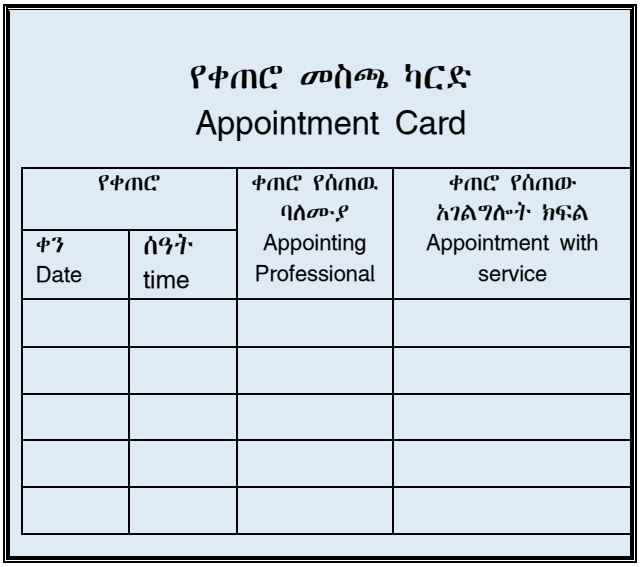


የቀጠሮ መስጫ ካርድ
APPOINTMENT CARD

የጤና ድርጅቱ ስም _____
Facility Name

ስም _____
Name

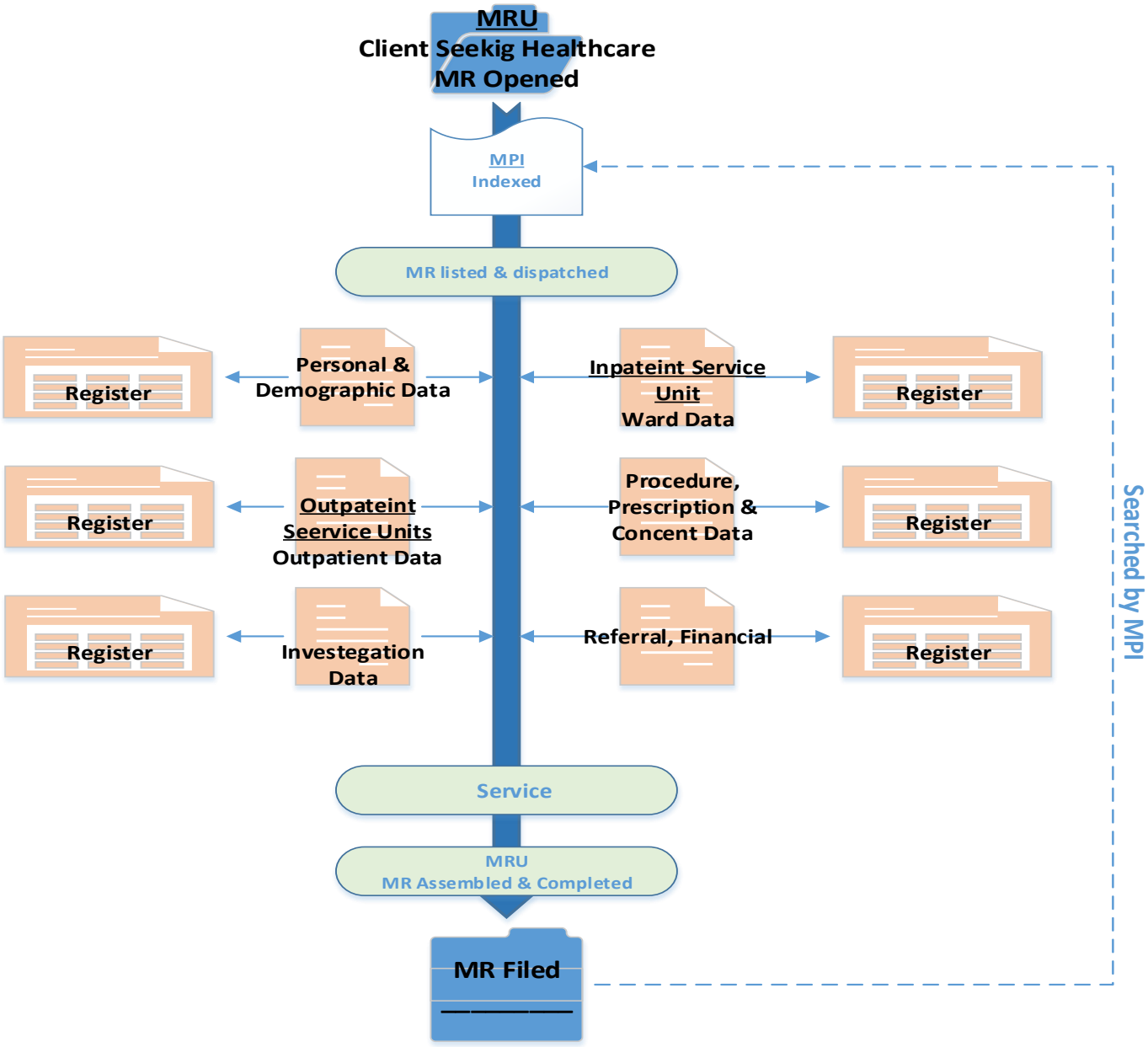
የህክምና ካርድ ቁጥር _____
Medical Record Number



የቀጠሮ መስጫ ካርድ
Appointment Card

የቀጠሮ		ቀጠሮ የሰጠዉ ባለሙያ Appointing Professional	ቀጠሮ የሰጠው አገልግሎት ክፍል Appointment with service
ቀን Date	ሰዓት time		

Figure 4. How information being created in patient's chart during service delivery



Primary source: HMIS Medical Records Training Manual, June 2008

3.2 Documenting Patient Information

3.2.1 Purpose of clinical documentation and what should be documented

MR documentation is essential to ensure quality of care for every patient. All information regarding the patient and his/her course of care at the hospital should be recorded in the MR. This includes his/her presenting symptoms and medical history, any diagnostic test orders and results, all documentation from care providers and consultants, interventions, diagnostics, medications, therapy, and information and instructions at discharge. Any subsequent return visits to the hospital should be recorded in the same MR.

The MR provides each clinician responsible for patient care with access to a record of the patient's health status, medical history, investigation procedures (lab tests, etc.), treatments and outcomes.

3.2.2 How and when to document

The health care professional responsible for administering each clinical event, intervention, instruction or observation, as soon as possible after the occurrence, should document each clinical event, intervention, instruction or observation. MRs of discharged patients should have all documentation completed by the discharging physician before the patient is discharged from the hospital and the record should then be returned to the card room.

All entries should be dated and authenticated with full signatures. Professional designation (i.e. MD, RN, etc.) should also be included.

This information is to be filed in one folder divided in separate sections for each visit/admission in chronological order.

If the patient has a chronic disease and regularly attends a Specialized Clinic (e.g. HIV, TB etc) then a separate section may be created in the MR folder to record all visits to the Specialized Clinic.

3.2.3 General rules in clinical documentation

- The patient's name and MRN should appear on each page.

- All handwriting should be in permanent ink that is legible when photocopied. Pencil entry in any part of the record is not permitted.
- All entries should be dated and authenticated, including signature and title of the author.
- Each clinician should sign those portions of the MR containing documentation of care for which he/she is responsible.
- Transcription of verbal orders or other information should be accurate and complete. It should be signed by the person who transcribed the verbal order or other information and co-signed by the person giving the verbal order within oneworking day of the verbal order.

3.2.4 Standardized documentation and forms

Only approved and standard clinical forms (approved by government agencies or hospital management) should be used in the MR. A standardized format should be used throughout the hospital's forms to facilitate the entry, review, and retrieval of information.

The following criteria can be applied to ensure standardization.

- All forms should be of the same size, usually maximum ofA4.
- Key identifiers such as the name of the form, patient's name and medical record number should be located in the same place on all medical record and clinical documentation forms.

3.2.5 Key components of clinical documentation and Medical Record forms

The MR should contain the following components, filed in the following order:

- Demographic sheet
- Summary sheet of all visit dates (including inpatient, outpatient, and emergency care)

For each inpatient admission, the following forms can be used depending upon the need for a specific client:

- Admission Card
- History and Physical Examination Assessment
- Progress notes
- Consultation request form (if relevant)

- Consent form (if relevant)
- Physician order sheet
- Laboratory order and report form(s)
- Radiology order and report form(s)
- Pathology order and report form(s)
- Pharmaceutical care plan (if relevant)
- Nursing Process Forms
    a) Nursing admission assessment form
    b) Nursing problem statement list
    c) Nursing care plan
    d) Nursing patient progress report
- Routine observation chart
- Medication administration record
- IV fluid and additive administration record
- Fluid balance chart
- Discharge summary
- Post mortem request and report (if relevant)
- Death summary (if relevant)
- Referral form(s)

NB: While the patient is in hospital some of the above forms (e.g. Nursing Care Plan, Routine Observation Chart, Medication Administration Record, IV fluid and Additive Administration Record); may be kept in a clip folder by the patient's bedside or at the nurses' station for ease of reference. When the patient is discharged these forms should all be entered into the MR before the MR is returned to the Medical Record Room.

For each outpatient attendance additionally needed:

- History and physical examination assessment
- Consultation request form (if relevant)
- Consent form (if relevant)

- Progress notes
- Laboratory order and report form(s)
- Radiology order and report form(s)
- Pathology order and report form(s)
- Triage form
- Referral form(s)
- Trauma flow sheet
- Critical Care flow sheet
- Emergency Nursing care sheet
- Wound assessment format
- Pain assessment format
- Inpatient 24 hour flow sheet (Emergency)
- Nurse to nurse shift report
- Burn Unit National Data Registry format

Samples of the Nursing Process Forms are presented in *Chapter 7 Nursing and Midwifery Care Standards* and the pharmaceutical care plan is described in *Chapter 10 Pharmacy Services.* Templates of all other forms listed above are presented in Appendix B.

Other forms that could be included in the MR if relevant include, but are not limited to:

- Immunization and growth monitoring records, for paediatrics
- Obstetrical care forms (Mothers prenatal, intrapartal and postnatal follow up form, safe child birth checklist, pre-anesthesia evaluation form, emergency obstetric triage form, etc.)
- Service record form
- Pre-anesthetic and post-anesthesia follow up form, critical care follow up form, blood request and transfusion report forms.

3.2.5.1 Forms included in a Medical Record include

1. Demographic sheet

Function: A page recording all patient demographic and contact information for all clinicians to reference (patient name, date of registration, date of birth/age, sex, address, emergency contact information).

Location: Front of MR.

Work process: When the patient is first registered, a demographic sheet will be put in the patient's MR.

2. Summary sheet of all visit dates

Function: To capture patient visits to the facility.

Location: Inner side of the front page of medical folder

Work process: All visit dates, for both inpatient and outpatients, will be recorded on the summary sheet.

3. History and physical examination assessment

Function: To record patient history and physical examination assessment findings.

Location: MR

Work process: When a patient is admitted as an in-patient a full history and physical examination should be conducted by the attending physician.

4. Progress notes

Function: To record clinical findings and progress.

Location: MR

Work process: When the patient is seen by a clinician, the information obtained will be recorded with date, clinical details, and signature of the attending clinician.

5. Consultation request sheet

Function: When a different specialty opinion is sought, the form serves as a communication tool for the different consulting parties.

Location: MR as a permanent record.

Work process: When any consultation is needed, the form is filled in two copies; one to be sent to the consulted physician and the other attached in the MR. i.e. The original one will be placed the request in the physician's order sheet and sign a consultation request. Nurses or appropriate case team member will contact the consulting specialist to see the patient. The consulting specialist should record the result/opinion on the consultation request.

6. Consent forms

Function: The consent form outlines the risks associated with a particular procedure. A signed consent form indicates that the patient (or designated proxy) has been informed of the risks and has authorized the procedure.

Location: MR

Work process: Before any procedure that has associated risks, the patient should be counseled regarding all risks and alternative options for treatment and asked to sign a consent form to indicate his/her agreement to the procedure. Consent should be obtained by the person who will perform the procedure.

7. Physician order sheet

Function: All physicians will write orders on this form, including diet, nursing care, medication, and investigation procedures (lab, imaging, consultation, etc.).

Location: MR.

Work process: When patient is admitted to a ward, a physician order form will be put in the MR. A physician will write his/her orders on this form and other individual request forms (i.e., medication prescription, lab order form, consultation request form, etc.).

8. Laboratory order and report result forms

Function: Informs laboratory of any individual patient's lab investigation order and allows lab result to be recorded on these forms.

Location: MR.

Work process:

Inpatient: When any lab test is ordered, the ordering physician will sign a lab order and report form. The lab order will be sent to lab. Lab will collect the sample and conduct corresponding test(s) upon receiving the order. The test results will be recorded on the lab order form as well as in the log book in the laboratory department. The completed lab order will then be sent back to the ward and kept in the MR.

Outpatient: When any lab test is ordered, the ordering physician will sign a lab order. The lab order will be given to the patient. Sample will be collected either in the outpatient department if phlebotomist or other appropriate personnel is assigned or will be collected by the laboratory department. For other tests the patient takes the lab order to the laboratory for the corresponding test(s). The test results will be recorded on the order form as well as in the log book in the laboratory department. The completed lab order will then be sent back to the ordering clinic/physician and kept in the MR. If the patient goes to an external lab for test; the completed lab order will be brought to the physician by the patient upon next follow up visit, to be filed in the MR.

9. Radiology order and report form

Function: Informs diagnostic imaging department of any individual patient's imaging investigation order and allows result to be recorded on this form.

Location: MR as a permanent record.

Work process:

In-patient: When any imaging test is ordered, the ordering physician will sign a radiology request. The radiology request will be sent to diagnostic imaging department. The radiology technician will schedule a test appointment upon receiving the order form. The test results will be recorded on the order form by the radiologist, as well as in the log book in the diagnostic imaging department. The completed radiology request and film will then be sent back to the ward and kept in the MR.

Outpatient: When any imaging test is ordered, the ordering physician will sign a radiology request. The radiology request will be given to the patient. The patient takes the radiology request to a diagnostic imaging department for the corresponding test(s). The test results will be recorded on the order form, as well as in the log book in the diagnostic imaging department. The

completed radiology request will then be sent back to the ordering clinic/physician and kept in the MR. If the patient goes to an external imaging clinic for test, the completed radiology request and film will be brought back to the physician by the patient upon next follow up visit, to be filed in the MR.

Emergency: When any imaging test is ordered, the ordering physician will sign a radiology request. If a mobile diagnostic imaging machine is available, the test will be done in the emergency room. The test results will be recorded on the order form. If mobile unit is not available, steps outlined for outpatients above should be followed.

10. Pathology order and report form

Function: Official record for the pathology request/results

Location: MR

Work process: When a pathology sample is collected (e.g. fluid aspirate, tissue biopsy) the ordering physician will complete a Pathology Request Form. The sample and form will be taken to the pathology department for analysis. If the required service is not available in the hospital the sample and request form should be taken to the central laboratory where they will be stored and then transferred to the appropriate facility, in accordance with hospital policy for sample referral.

11. Nursing Process Forms

a) Nursing admission assessment form

b) Nursing problem statement list

c) Nursing care plan

d) Nursing patient progress report

Function: To describe the nursing assessment, care plan and outcome of nursing care of an admitted inpatient.

Location: Every MRs made during the patient's stay must ultimately be included in the patient's MR as a permanent record.

Work process: When a patient is admitted, a nurse completes a nursing assessment and care plan within 8 hours. The outcomes of nursing care are documented on the problem list, care plan and progress report during the course of the patient's admission.

Further discussion on the Nursing Process is presented in *Chapter 7 Nursing and Midwifery Care Standards*.

12. Routine Observation Chart

Function: To record the vital signs of each specific patient during the hospital stay.

Location: Bed-side clip board during the patient's stay, but must ultimately be included in the patient's MR as a permanent record at patient discharge

Work process: When vital sign measurements are needed, the observation sheet will be put in the bed-side clip board. The nurse will record all vital sign measurements on this form. When one sheet is finished, a new blank sheet will be put on top of the finished sheet. When the patient is discharged, all the forms will be put in the MR.

13. Medication Administration Record

Function: To record all medications ordered and administered to a patient.

Location: Bed-side clip board during the patient's stay, but must ultimately be included in the patient's MR as part of the permanent record at patient discharge.

Work process: When medication is ordered for an in-patient the name of the medication, route of administration, dosage, time and frequency of administration should be documented on the medication administration record and signed by the transcriber. When the medication is administered, the nurse should sign the appropriate box on the form.

14. IV Fluid and Additive Administration Record

Function: The record should detail all specific infusions, including rate of drops and duration of infusions while the patient is confined.

Location: Bed-side clip board during the patient's stays, but must ultimately be included in the patient's MR as part of the permanent record at patient discharge.

Work process: When medication or IV fluid is ordered for an in-patient the name of the IV fluid and rate of infusion should be documented on the IV fluid administration record. The name and dosage of any additives should also be documented. When the IV infusion is given, the start time and end time of the each bag of fluid should be documented and signed by the responsible nurse.

15. Fluid Balance Chart

Function: To record all fluid inputs and outputs for patients at risk of fluid overload or dehydration.

Location: Bed-side clip board during the patient's stayed, but must ultimately be included in the patient's MR as part of the permanent record at patient discharge.

Work process: All fluid inputs both oral and intravenous and all outputs including urine and other outputs such as blood loss should be documented on the chart by the nurse. At the end of every 24 hours the balance is calculated as 'total input' minus 'total output'.

16. Discharge summary

Function: An instruction sheet to summarize all needed information for the patient upon discharge.

Location: One copy in the MR and one copy to patient.

Work process: Discharging physician will fill out the discharge summary that includes a summary of the patient's diagnosis, treatment and investigations and any instructions following discharge (for example medications, wound care, diet, activity and follow-up appointments). The form will be kept in the MR for hospital record and a copy will be given to the patient to bring it during the day of appointment.

17. Death summary sheet (if relevant)

Function: In the event that a patient dies, to document patient's health records, care received and cause of death.

Location: MR

Work process: After death the attending physician should complete a death summary. If a post mortem examination is required, the death summary should be completed AFTER the results of the post-mortem examination are known.

18. Referral and Feedback Form (if relevant)

Function: To document patient history at the hospital and to provide reason for referral

Location: One copy in the MR and one copy to patient.

Work process: If it is necessary to refer a patient to another facility the attending clinician should complete a referral request, indicating the reason for referral, summary of the patient history and examination and the results of any investigations conducted.

3.2.6 Correcting Medical Record Data

If any data contained within a MR require correction, the following rules should apply:

- No erasure or other obliteration should be made.
- Incorrect data should be lined out with a single line.
- The date of correction, full name, signature and profession of the person making the correction, the correct information, and the reason for the correction should be added.

3.3 Handling of Medical Records

A comprehensive MR management system encompasses the handling the MR from time of patient registration, during active care delivery, through patient discharge, and ongoing filing/storage of the MR, until removal/destruction of old MRs from storage. The flow of MRs/charts is important to ensure a balance between availability of clinical information and patient confidentiality. A well-designed system minimizes the loss of MRs.

3.3.1 Tracking the location of Medical Records

A MR location tracking system should be established in order to find MRs. The system varies

depending on whether or not a paper-based or computerized patient registration system is used.

Manual Paper-Based System: A check in/out log book should be used by Medical Record Room

Staff. Entries on the log should include the following information:

Fig 5. Tracer Card

MRN	Date dispatched from MRU	Name & signature of person dispatched	Location MR taken to & Name of care provider	Date returned to MRU

On a daily basis, assigned MR staff should refer to the logbook and ensure that all MRs are returned to the card room. The only exception is for admitted inpatients whose treatment is ongoing. This step is important, as it prevents loss and misuse of MRs. In addition, when a MR is removed, one can put in its place a tracer card, which is a card the size of the MR, on which is written the patient name, the MRN, where the MR is going, and the date it was removed from the file. This can help track where records are outside the Medical Records Room. When not in use the tracer card should be stored in the back of the MR. A sample tracer card is included in Appendix A.

Computer-Based System: In a computerized patient registration system, a MR tracking feature should allow an easy and effective method to locate MRs.

3.3.2 Who should handle Medical Records?

Only authorized personnel should have access to MRs, and only on a "need to know basis." Selected employees who have been designed by hospital management to handle MRs and who have received MR training should only access the Medical Records Unit (MRU). When other hospital employees need access to MRs, a request should be made to the MR staff. Patients should never handle MRs without staff assistance.

Hospitals should develop strict procedures based on these principles and ensure that all staff members are properly informed and trained for proper implementation practice.

3.3.3 Medical Records at Discharge

The MR of discharged or deceased patients should be returned to the Medical Record Case Team within 24 hours of discharge. The Medical Record Case Team should review the MR to see if all forms have been properly signed, particularly the discharge summary. If they are not signed, the MR Department should alert the physician on record or case team leader to complete and sign the discharge summary.

3.3.4 Archiving Medical Records

Inactive files (i.e., MRs with no clinical activities for a pre-defined period of time (i.e., 2 years) may be archived by MR staff in order to regain shelving space. Individual hospitals should establish an archiving policy.

When archiving, these files should be numerically stored in a separate area, according to their MRNs. The corresponding MPI index card of the patient should be labeled "archived". NEVER create another file numbering system for archived files.

If archived files needed to be retrieved, the same MR retrieving mechanism should be used.

3.3.5 Destruction of Inactive Medical Records

The FMOH "Hospitals Patients/Clients/Records Retention Schedule" guideline details the length of time a MR is retained in inactive status. In general, a facility is required to retain a MR for up to 10 years after the patient's last episode of care at that facility. After the pre-defined retention period, the MR should be destroyed by burning, shredding or another method that is certain to maintain the patient's confidentiality. Destruction of the medical record should also be supervised by the head of the MR department.

If medical records are destroyed, the following key information should be maintained permanently:

- Medical record name
- Full name, Sex and Date of birth;
- Last visit/Admission/Discharge date
- Patient first date of visit
- Diagnosis/Patient status;

- Name of the attending doctor(s);
- Investigations and operations/Procedures performed; and
- Discharge summary for each admission if more than one

Fig 6 - Registration logbook for retaining vital patient information while destroying

Medical record number (MRN	Full name	Sex/Date of birth	Last visit/Admission/Discharge date	Patient first date of visit	Diagnosis/Patient status	Name of the attending doctor(s)	Investigations and operations/Procedures performed	Discharge summary

A note should be included with the retained documents stating that the records have been destroyed according to the retention policy.

The MR Department should establish a folder to collate the information above for all MRs that are destroyed.

3.3.6 Access to Medical Records from the Hospital

MRs should be accessed from the facility only upon an order from the appropriatejurisdiction bodies. The hospital should establish its own policy regarding MR removal from the premises, and this policy should comply with federal and regional health policies.

If a patient seeks health care from another hospital and has consented to the release of his/her clinical information to the new hospital, only a photocopy should be given to the requesting hospital. The original MR should never be transferred out of the hospital.

3.3.7 Confidentiality

MRs should be maintained in the strictest confidence, as they contain personal and private information about patients, including their health status, personal, family and contact information. MRs should be stored in a secure area, and there should be clear policies regarding confidentiality and the release of patient information. Particularly for the medico legal cases, a separate locked MR store should be available on place.

The content of a MR should only be used for providing patient care or in the course of supporting patient care activities (for example evaluation of services, clinical audit etc.). Access to the content of MRs should be granted only to personnel who are undertaking the above activities. Other supporting staffs that are granted access to MRs but are not involved in delivering patient care (e.g., porters, runners) should not read and/or disclose the content of the records.

All employees should sign a 'Code of Conduct' that includes a statement regarding the confidentiality of patient information.

3.4 Human Resources for the Medical Records Department

All personnel that work in the Medical Records Department should be qualified to conduct their jobs, which require reading, keyboarding, and organizational skills. Depending on the size of the

facility and volume of patients, the number of personnel working in the Medical Records Department will vary. However, there should be enough staff to cover the following duties, particularly during the prime hours:

- Patient registration
- Authorization of free and credit services
- Development and maintenance of the MPI
- Retrieving and filing MRs
- Delivering files to various locations of the hospital
- Recording chart location
- Collection of MRs from individual service units
- Checking and ensuring completion of MRs after discharge or death
- Filing reports generated by the Medical Records Department
- Handling of medico-legal issues relating to releasing patient information and other legal issues.

All MR personnel should undergo MR orientation and subsequent annual training on all departmental policies. Professional mix of the staffs of medical record unit should incorporate MRU head, Information Technology professional, Health Information Technology (HIT) workers, runners and cashers.

3.5 Electronic Medical Records

3.5.1 What is an electronic medical record system?

Hospital automates its health information system through the implementation of an integrated electronic medical record system. An integrated electronic medical record system includes all service provision units and information is generated using standard formats introduced by Health Management Information System (HMIS). Hospitals that have successfully implemented the manual HMIS in their facility should plan and implement an integrated electronic medical record system to automate all activities in the facility. Facilities will work with the FMOH to fulfill this standard by requesting national developed systems. The data, which is collected using the electronic medical record system, will be reflected as well as primary input for E-HMIS.

Maintaining the implementation and ensuring the sustainability of the implementation will be the responsibility of the facility; however, hospitals can request technical support from the FMOH when necessary. The FMOH is responsible to provide integrated support as well as work closely on every step of the process. Hospitals are required to avoid parallel and repetitive automated system implementation and should instead plan and ensure an integrated automated systems as well as substandard automations.

3.5.2 Resources Needed to Implement an Electronic Medical Record

Hospital will need to deploy ICT infrastructure to support integrated e-health applications and also study their ICT infrastructure needs. Need with the appropriate and qualified IT professional. Required ICT infrastructure in the hospital includes cabled/wireless local area network, computer with better performance capacity and server computers but not limited to this. Specification for the items needed should be defined ensuring that all equipment meets international standards and budget set for the procurement and installation of the needed items.. In addition, hospitals will need to determine their need for appropriate and qualified IT professionals and employ IT professionals required to fit their ICT infrastructure need and the specifications of the system deployed in the hospital. The hospitals should also consider expansion and upgrading the system through time when there is service relocation or new construction in their premises.

Section 4 Implementation Checklist and Indicators

4.1 Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Medical Records Management have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in the assessment handbook.

4.2 Implementation Checklist

The following Table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. This tool is not meant to measure attainment of each Operational Standard, but rather to provide a checklist to record implementation activities.

S. No	Elements of Checklists	Yes	No
1.	Unique medical record number assigned to a patient during his/ her first visit of care.		
2.	The hospital shall have a single unified medical registration unit for all patients' registration.		
3.	The hospital utilizes paper and computer-based systems to register and retrieve medical records.		
4.	The hospital avails and utilizes a standard set of formats that comprise a complete medical record for continuum of patient's care.		
5.	The hospital shall implement and comply with national guidelines to manage access to patient's medical records.		
6.	The Hospital's MRU head ensures allocation and availability of all necessary resources to manage medical recording activities.		
7.	Hospital performs medical record auditing, data quality checks, archiving/culling procedures and takes corrective actions on a regular basis.		
8.	Hospital ensures patient's medical records return from different service units to MRU at the end of each service day in accordance with medical record tracing system.		
	Percentage		

4.3 Indicators

In addition, the following indicators should be monitored on a regular basis to assess the effectiveness/outcomes of implementation of the recommendations provided in this chapter.

Table 2 Medical Records Management Indicators

S/N	Indicators	Formula	Frequency
1.	% of medical records lost	(Randomly sample 50 MRNs from the MPI and check to see if the medical record (MR) is in the medical records room. A MR is considered lost if it is not found in the card room and there is no tracer card indicating where the medical record can be found. Calculate the total number of cards not found/50)*100	Quarterly
2.	% of inpatient medical records with completed discharge summary	(Total number of inpatient medical records with a discharge summary/total number of inpatient medical records)*100	Quarterly
3.	Number of complaints received against Medical Records Unit / Case Team	Total number of complaints against the Medical Records Unit / Case Team	Quarterly
4.	a) Number of complaints solved b) % of complaints solved	a) Total number of MR complaints upheld b) (Total number of MR complaints solved/Total number of MR complaints filed)*100	Quarterly

Source Documents

1. Federal Democratic Republic of Ethiopia Ministry of Health. (2008, June). *Health Management Information System (HMIS). Medical Records Training Manual.*

2. Federal Democratic Republic of Ethiopia. (2007). *Hospitals Patients /Clients Records Retention Schedule.*

World Health Organization (2002). *Medical Records Manual: A Guide for Developing Countries.* Revised and updated 2006. Manila: Regional Office for the Western Pacific. Retrieved from: http://www.wpro.who.int/NR/rdonlyres/7FB74A3F-34F6-4C46-A9F0-1F0D52D04254/0/MedicalRecordsManual.pdf

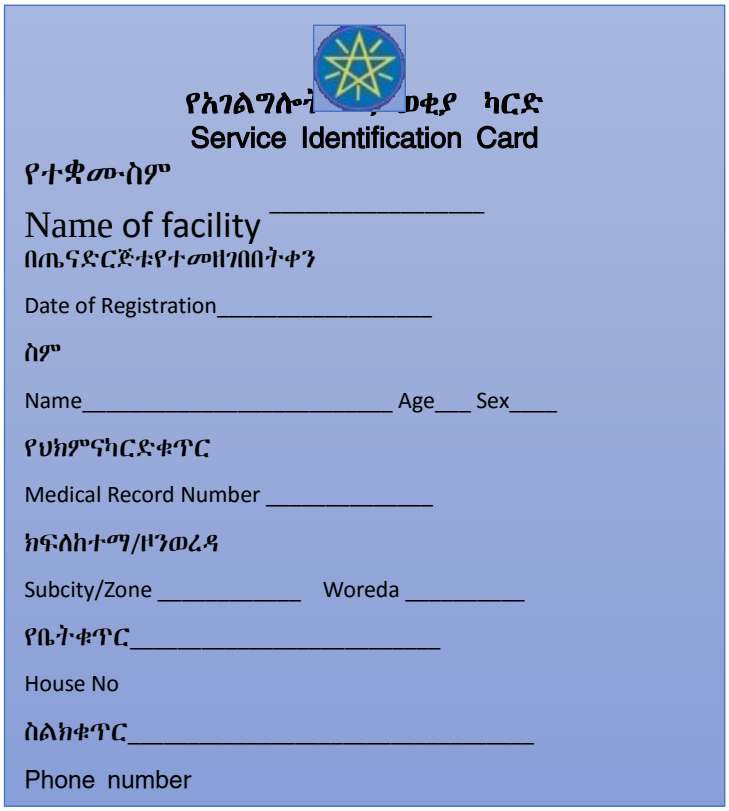
Appendices

Appendix A Template of Medical Records Department Forms

Item 1: Master Patient Index Card

"[Name of Facility]"	
Master Patient Index Card	
የህክምና ካርድ ቁጥር Medical Record Number:	**የተመዘገቡበት ቀን** Date Of Registration(DD/MM/YY)
ስም Patient's Name:	**የአባት ስም** Father's Name:
የአያት ስም Grand Father's Name:	**ፃ□** Sex: ❑ F ❑ M
የልደት፡ ቀን ወር ዓ/ም Date Of Birth Day Month Year	**ክትመ** Age:
›ትራሻ □ልል □ረ□ ቀበሌ Address: Region Woreda Kebele	
ያዓ Gott:	**የቤት ቁጥር** House Number:

Item 2: Service card (Front & Back)



የአገልግሎትመታወቂያካርድ **Service Identification Card**		
የማህበረሰብአቀፍኢንሹራንስታካሚ CBHI	የህብረተሰብአቀፍኢንሹራንስታካሚ SHI	የነጻ /የዱቤአገልግሎትማህተም Free/Credit Service stamp

Item 3: Appointment card (Front & Back)

የቀጠሮመስጫካርድ

APPOINTMENT CARD

¾Ö?“ É`Ï~ eU _____

Facility Name

eU _____

Name

¾I¡U“ "`É lØ` _____

Medical Record Number

የቀጠሮ		**የቀጠሮመስጫካርድ Appointment Card**	
ቀን DATE	ሰዓት TIME	ቀጠሮየሰጠዉባለሙያ Appointing Professional	ቀጠሮየሰጠውአገልግሎትክፍል Appointment with service

Item 4: Tracer Card

Tracer card

Facility Name: _____

MRN #: _____

Patient's Name: _____

#	Department/Person MR is sent to	Receiver's Signature	Date

Appendix B Template of forms is included in a Medical Record

Item 1: Patient Information Demographic Sheet

<table>
<tr><td colspan="5">PATIENT INFORMATION</td></tr>
<tr><td>MRN:</td><td colspan="2">Patient’s name:</td><td>Sex:

❑ F ❑ M</td><td>Registration date:

/ /</td></tr>
<tr><td colspan="3"></td><td colspan="2">Phone no.:
( )</td></tr>
<tr><td>City/Town:</td><td>Woreda:</td><td>Kebele:</td><td colspan="2">House no:</td></tr>
<tr><td colspan="5">Emergency contact information:

Contact’s Name:_____

Telephone Number:_____</td></tr>
</table>

Item 2: Summary Sheet of all Visit Dates

INTEGRATED FOLDER SUMMARY SHEET
(One line per visit – not for clinical notes)

MRN #: _____

Patient's Name: _____

Date (DD/MM/YY)	Service*	Diagnosis / Complication or Service Detail **	Serial number in service registration book	Cost

* Write the department providing service: IPD, OPD, ANC, FP, EPI, etc

** OPD / IPD Service – write diagnosis

FP, ANC, PNC – write complication, if any

EPI – write antigen given

Item 3: Admission and Discharge Card (Front)

□□ና ጣቢያ □ሒሳብ ማስተ□ቂ□ ቁጻር

_____Health Center CASH SHEET NO _____

የሕመምተኞች መቀበያ ካርድ

ADMISSION CARD

የህክምና ካርድ ቁጥር

Medical Record Number (MRN) _____

ስም **የአባት ስም**

Name _____ Father's Name _____

የአያት ስም **ፃ□**

Grand Father's Name _____ Sex _____

አድራሻ ክልል □ረ□/□ኦ ለ-ከተማ

Address: Region _____ Woreda/Subcity _____

ዖጓ **ቀበሌ**

Gott _____ Kebele_____

የቤት ቁጥር

House Number_____

□□ኻ ሉ ቁጻር **የአልጋ ቁጥር**

Ward No. _____Bed No. _____

ሲገባ የሕመሙ ሁኔ□

Admission Diagnosis _____

□ተረ□ቶ□□ ሕመሙ

Discharge Diagnosis _____

ከሆስፒተል ሲወጣ የነበረው ሁኔተ

Condition on discharge

ከህመሙ ድኖ/ተሽሎት **ሞቶ** **ወደ ሌላ ጤና ድርጅት ተልኮ**

Improved □ **Dead □** **Referred □**

ከሐኪም ፈቃድ ውጭ በገዛ ፈቃዱ ሄዶ **ጠፍቶ**

Left against Medical Advice □ **Absconded □**

ጠና ጣቢያ የገባበት ቀን **የተቀበለው ሐኪም ፊርማ**

Date of admission _____ **Signature of Admitting Dr. _____**

የወጣበት ቀን **ያሰናበተው ሐኪም**

Date of Discharge _____ **Discharged by _____**

የመኝታ ክፍል ኃላፊዋ ነርስ ኝርማ ለመ□ባቱ	የመኝታ ክፍል ኃላፊዋ ነርስ ፊርማ ለመውጣቱ
Sign. Of Ward Nurse for Admission _____	Sign. Of Ward Nurse for Discharge _____
□□ሬ□ተሩ ፊርማ ለመግባቱ (አስፈላጊ ከሆነ)	ለመውጣቱ (አስፈላጊ ከሆነ)
Director's Sign. For Admission (if required) _____	For Discharge (if required) _____

	□ኢት/ብር	ሣ
	Birr	Cts.
□ተኛበት ቀን ብዛት የአንድ ቀን ክፍያ ብር Number of days admitted _____ Amount per day in birr _____		
የኤክስሬይ ምርመራ ሒሳብ For X-Ray Examination _____		
የመድሃኒት ሒሳብ For Medicine _____		
የኦፐራሲዮን ሒሳብ For Operation _____		
የላቦራቶር ሒሳብ For Laboratory _____		
ልዩ ልዩ አገልግሎት ሒሳብ For Various Services _____		
ተከፋይ Total Payment		
በመያዣ አስቀድሞ የተከፈለ Deposited		
የሬጅስትራሩ ኝርማ Signature of Registrar		
ተመላሽ Amount to be Reimbursed		
_____ ተሬ ማሪ □አ□ Amount to be paid		

□ሂሣብ ሹም ኝርማ

Signed by The Chief Accountant _____

Item 3: Admission and Discharge Card (Back side)

ለሕክምናው ሂሣብ ተጠያቂ

FINANCIAL RESPONSIBILITY

የገንዘብ ከፋይ ስም

Name of Individual Responsible for Bill _____

□ሥራ ቦተ **□ስል□ ቁዓ ር**

Occupation _____ Tel. _____

ቀበሌ **□ረ□/□አ ለ-ከተማ** **የቤት ቁጥር** **□ስል□ ቁዓ ር**

Kebele _____ Woreda/Subcity _____ House No. _____ Tel. _____

የዝምድናው ዓይነት **□□ ጠና ጣቢያ □መ□□**

Relationship _____ Brought to Health Center by _____

ስሜ ከላይ የተገለፀው ከላይ የተጠየቀውን ገንዘብ በሙሉ የመክፈል ኃላፊነት እንዳለብኝ በፊርማዬ አረጋግጣለሁ።

I, the above named person, accept full responsibility for payment of the charges incurred during this period of Hospitalization.

ኻርማ

Signature

_____

Item 4: History and Physical Examination Assessment

History and Physical Examination Assessment					
Name:				**Ward:**	
MRN:				**Bed Number:**	
Date of Admission:					
Presenting Complaint:					
History of Presenting Complaint:					
Past Medical History:					
Drug History:					
Family History:					
Personal/Social History:					
PHYSICAL EXAMINATION					
General Appearance:					
Vital Signs:	**Temp:**	**BP:**	**Pulse:**	**Resp:**	**Pain Score:**
HEENT:					
Glands:					
Chest:					
CVS:					
Abdomen:					

Genito-Urinary:	
Musculo-Skeletal:	
Skin:	
Central Nervous System:	
Motor:	
Sensory:	
IMPRESSION:	
DIFFERENTIAL DIAGNOSIS:	
PLAN OF ACTION (investigations, treatments and medication ordered)**:**	
Name of physician:	**Signature:**
Date of assessment: / /	**Time of assessment:**

Item 5: Health Center Progress Note

HEALTH CENTER PROGRESS NOTE			
Name:		**OPD** ☐	
MRN:		**IPD** ☐ **Ward:**	**Bed Number:**
Date & Time	**Progress Note**		

Item 6: Consultation Request Form

CONSULTATION REQUEST FORM			
Patient Name: _____	**OPD** ☐		
MRN: _____	**IPD** ☐	**Ward:** _____	**Bed No:** ___
Consultation requested by: _____	**Position/Designation:** _____		
Signature: _____	**Date of request:** _____		
Type of consultation needed:			
Reason for consultation:			
Consultation report:			
Consulting Physician\Health Officer\Nurse Name:	**Signature:**		
Specialty:	**Date:** / /		

Item 7: Consent Form

CONSENT FORM

MRN #: _____

Patient's Name: _____

1. Name of proposed procedure or course of treatment (include brief explanation of medical terms are not clear):

_____

_____

2. Statement of health professional (to be completed by health professional with appropriate knowledge of proposed procedure):

I have explained the procedure to the patient. In particular I have explained:

The intended benefits:

_____

_____

_____

Serious or frequently occurring risks:

_____

_____

_____

Any extra procedures which may become necessary during the procedure:

☐ Blood transfusion

☐ Other procedure (please specify) _____

I have also discussed what the procedure is likely to involve, the benefits and risks of any available alternative treatments (including no treatment) and any particular concerns of this patient.

This procedure will involve:

☐ General and/or regional anaesthesia ☐ Local anaesthesia ☐ Sedation

3. For females of reproductive age (if relevant):

During the operation it may be necessary to take an X-ray to assist the surgeon with the procedure. It is important that X-Rays should be avoided if there is a possibility of pregnancy.

Date of Last Menstrual Period: _____

Is there a possibility of the patient being pregnant? Yes ☐ No ☐

If yes, can this procedure be deferred or does the clinical urgency override the risk to the pregnancy?

☐ Yes, the procedure should be deferred ☐ No, the procedure must be performed

Signed:_____ **Date: _____**

Name: _____ **Job title: _____**

Do ask if you have further concerns. We are here to help you. You have the right to change your mind at any time, including after you sign this form. You may ask for a relative or a friend or a nurse to be present whilst the procedure is being explained and consent obtained.

Please tick boxes to indicate that you have understood and agreed to the statements below:

☐ I agree to the procedure or course of treatment described on this form.

☐ I understand that you cannot give me a guarantee that a particular person will perform the procedure. The person will however have appropriate experience.

☐ I agree that any procedure in addition to those described on this form will only be carried out if it is necessary to save my life or to prevent serious harm to my health.

☐ I have been told about additional procedures that may become necessary during my treatment. I have listed below any procedures **which I do not wish to be carried out** without further discussion.

☐ I acknowledge that the nature and purpose of the foregoing procedures and the risks associated with the procedure have been explained to me and I have been given the opportunity to ask questions.

Patient's signature: _____ **Date: _____**

Name (print): _____

If the patient is unable to sign, but has indicated his or her consent, a witness should sign below:

Signature: _____ **Date: _____**

Name (print): _____

Item 8: Physician\Health Officer\Nurse Order Sheet

HEALTH PROFESSIONAL ORDER SHEET						
Name:				**Ward:**		
MRN:				**Bed Number:**		
Date	**Time**	**Order**	**Signature**	**Transcriber's signature (if relevant)**	**Date and Time order completed**	**Signature**

Item 9: Haematology Order and Report Form

HAEMATOLOGY ORDER AND REPORT FORM						
Name:				**OPD** ☐		
MRN:				**IPD** ☐ **Ward:**		**Bed Number:**
Age:	**Sex:**					
Clinical history:						
Test ordered		**Result**			**Reference**	
Total CBC	☐	_____	cells/mm^3		_____	cells/mm^3
Differential	☐					
Neutrophil		_____	%		_____	%
Lymphocyte		_____	%		_____	%
Eosinophil		_____	%		_____	%
Basophil		_____	%		_____	%
Monophil		_____	%		_____	%
Haemoglobin	☐	_____	G/dL		_____	G/dL
Haematocrit	☐	_____	%		_____	%
MCV	☐	_____	Fl		_____	Fl
MCH	☐	_____	Pg		_____	Pg
MCHC	☐	_____	Pg		_____	Pg
RBC	☐	_____	cells/mm^3		_____	
Platelet Count	☐	_____	x 10^3		_____	x 10^3
ESR	☐	_____	mm/hr		_____	mm/hr
Bleeding time	☐	_____			_____	
Clot retraction	☐	_____			_____	
Coagulation time	☐	_____			_____	
Prothrombin time	☐	_____			_____	
P.T.T.	☐	_____			_____	
Fibrinogen	☐	_____			_____	
Coomb's test	☐	_____			_____	
CD4 (absolute)	☐	_____	Cell/ul		_____	Cell/ul
Other (describe):	☐					
_____						
Ordered by:	_____			Sample collected by: _____		
Date of order:	_____			Date of collection: _____		
Time of order	_____			Time of collection: _____		

Lab tech comments: Name of lab tech: _____ Signature: _____ Date of analysis: _____ Time of completion: _____ Result checked/approved by: _____

Item 10: Clinical Chemistry Order and Report Form

CLINICAL CHEMISTRY ORDER AND REPORT FORM				
Name:		**OPD** ☐		
MRN:		**IPD** ☐ **Ward:**	**Bed Number:**	
Age:	**Sex:**			
Clinical history:				

Test ordered		Result		Reference	
SGOT		_____	IU/L	_____	IU/L
SGPT		_____	IU/L	_____	IU/L
ALP		_____	IU/L	_____	IU/L
AST		_____	IU/L	_____	IU/L
Sodium		_____	MEQ/dL	_____	MEQ/dL
Potassium		_____	MEQ/dL	_____	MEQ/dL
Calcium	☐	_____	mg/dl	_____	mg/dl
Creatinine	☐	_____	mg/dl	_____	mg/dl
Bilirubin direct	☐	_____	mg/dl	_____	mg/dl
Bilirubin total	☐	_____	mg/dl	_____	mg/dl
Blood urea nitrogen	☐	_____	mg/dl	_____	mg/dl
Total Protein	☐	_____	G/dL	_____	G/dL
Albumin	☐	_____	G/dL	_____	G/dL
Uric Acid	☐	_____		_____	
Fasting Blood Glucose	☐	_____	mg/dL	_____	mg/dL
Random Blood Glucose	☐	_____	mg/dL	_____	mg/dL
Amylase	☐	_____	U/L	_____	U/L
Triglycerides	☐	_____	mg/dL	_____	mg/dL
Cholesterol	☐	_____	mg/dL	_____	mg/dL
Other (describe):	☐				
_____	☐				

Ordered by: _____ Sample collected by: _____

Date of order: _____ Date of collection: _____

Time of order _____ Time of collection: _____

Lab tech comments:

Name of lab tech: _____ Signature: _____

Date of analysis: _____ Time of completion: _____

Result checked/approved by: _____

Item 11: Serology Order and Report Form

MICROBIOLOGY ORDER AND REPORT FORM		
Name:		**OPD** ☐
MRN:		**IPD** ☐ **Ward:** **Bed Number:**
Age:	**Sex:**	
Clinical history:		

Test ordered		**Result**
HIV serology rapid test		_____
HIV serology by EIA		_____
Cryptococcal Ag		_____
Hepatitis B		_____
Hepatitis C	☐	_____
TPPA/TPHA/RPR	☐	_____
Syphilis	☐	_____
Pregnancy test (HCG)	☐	
Other (describe):	☐	_____
_____	☐	_____

Ordered by: _____ Sample collected by: _____

Date of order: _____ Date of collection: _____

Time of order _____ Time of collection: _____

Lab tech comments:

Name of lab tech: _____ Signature: _____

Date of analysis: _____ Time of completion: _____

Result checked/approved by: _____

Item 12: Microbiology Order and Report Form

MRN:		**IPD** ☐ **Ward:**	**Bed Number:**
Age:	**Sex:**		
Clinical history:			

Sample type/site:

Test ordered		**Result**
AFB smear	☐	_____
India Ink Stain	☐	_____
Gram Stain	☐	_____
Microbiology smear	☐	_____
C+S	☐	_____
Wet mount - direct microscopy	☐	_____
Other (describe):	☐	_____
VDRL	☐	_____
Skin scraping	☐	_____
Skin snip	☐	_____
Other (describe below):	☐	
_____	☐	_____

Ordered by: _____ Sample collected by: _____

Date of order: _____ Date of collection: _____

Time of order _____ Time of collection: _____

Lab tech comments:

Name of lab tech: _____ Signature: _____

Date of analysis: _____ Time of completion: _____

Result checked/approved by: _____

Item 13: Stool Analysis Order and Report Form

STOOL ANALYSIS ORDER AND REPORT FORM		
Name:		**OPD** ☐
MRN:		**IPD** ☐ **Ward:** **Bed Number:**
Age:	**Sex:**	
Clinical history:		

Result

Consistency _____

Occult blood _____

Cells _____

Ova or parasite _____

Other _____

Ordered by: _____ Sample collected by: _____

Date of order: _____ Date of collection: _____

Time of order _____ Time of collection: _____

Lab tech comments:

Name of lab tech: _____ Signature: _____

Date of analysis: _____ Time of completion: _____

Result checked/approved by: _____

Item 14: Urine Test Order and Report Form

URINE TEST ORDER AND REPORT FORM		
Name:		**OPD** ☐
MRN:		**IPD** ☐ **Ward:** **Bed Number:**
Age:	**Sex:**	
Clinical history:		

Result

Colour _____

Appearance _____

Protein _____

Glucose _____

pH _____

Blood _____

Ketones _____

Bilirubin _____

Pregnancy test (HCG) _____

Other(describe below):

_____ _____

Ordered by: _____ Sample collected by: _____

Date of order: _____ Date of collection: _____

Time of order _____ Time of collection: _____

Lab tech comments:

Name of lab tech: _____ Signature: _____

Date of analysis: _____ Time of completion: _____

Result checked/approved by: _____

Item 15: Radiology/Ultrasound Order and Report Form

RADIOLOGY/ULTRASOUND ORDER AND REPORT FORM		
Name:		**OPD** ☐
MRN:		**IPD** ☐ **Ward:** **Bed Number:**
Age:	**Sex:**	
Investigation (s) requested:		

Summary of clinical history,relevant clinical findings and investigation results:	
Requesting physician:	**Signature:**
Date of request:	**Time of request:**

Report: *To be completed by trained radiologist/ultrasonographer if available.*

Name of reporter: _____ Signature_____

Designation/Position: _____ Date of report: _____

NB: The X ray film or Ultrasound pictures should also be sent to the requesting physician for review and interpretation if no radiologist/ultrasonographer is available.

Item 16: Pathology Order and Report Form

PATHOLOGY ORDER AND REPORT FORM		
Name:		**OPD** ☐
MRN:		**IPD** ☐ **Ward:** **Bed Number:**
Age:	**Sex:**	**Date specimen collected:**
Specimen type and site:		**Time specimen collected:**

Investigation (s) requested:	
Summary of clinical history,relevant clinical findings and investigation results:	
Requesting physician:	**Signature:**
Date of request:	**Time of request:**
Report: **Name of reporter: _____ Signature_____** **Designation/Position: _____ Date of report: _____**	

Item 17: Routine Observation Sheet

Name:_____

MRN: _____

Ward: _____Bed: _____

	DATE																
	Time																
TEMPERATURE	>41																
	41																
	40																
	X																
	39																
	38																
	37																
	36																
	35																
	<35																
PULSE and BP	>200																
	Pulse ●																
	200																
	190																
	180																
	170																
	160																
	Systolic BP 150																
	140																

	130																	
	120																	
	110																	
	100																	
	Diastolic BP 90																	
	80																	
	70																	
	60																	
	50																	
	40																	
	<40																	
Respiration / min																		
Pain Score (0-10)																		
O2 Saturation %																		
Foetal Heart Rate																		
Blood Sugar																		
Dip-stick Urine	**Protein**																	
	Blood																	
	Sugar																	
	Ketones																	
_ Circum. Of head (cm)																		
_ Circum. Of arm (cm)																		
Bowel																		
Weight (kg)																		
Remarks:																		
Staff Initial:																		

Item 18: Medication Administration Record

Name:_____

MRN:

_____

Ward: _____Bed: _____

Diagnosis:								**Allergy:**				
#	**Date**	**Medications** (Name, dose, route, freq)	**Time to give** one time each line	Signature of Transcriber	Date	Date	Date	Date	Date	Date	Date	Date
					Given by	Given by	Given by	Given by	Given by	Given by	Given by	Given by

Item 19: IV fluid and Additive Administration Record

Name:_____

MRN:

_____

Ward: _____Bed: _____

Diagnosis:				**Allergy:**					
#	**Date**	**IV Fluid** (Name, Volume, Rate)	**Additives**	**Discontinue date**	**Date of start**	**Time of start**	**Mixed, checked, given by**	**Time completed**	**Completed by**

Item 20: Fluid Balance Chart

FLUID BALANCE CHART	
Please Complete or Affix Label	
MRN:	Ward:
Name	Bed No.:

Date:											
Previous days balance (+ or -)											
INTAKE						OUTPUT					Total Fluid Balance (ml/24hr)
Time	Oral		Intra-Venous	Intra-Venous	Total Intake	Urine	Others			Total Output	
01.00											
02.00											
03.00											
04.00											
05.00											
06.00											
07.00											
08.00											
09.00											
10.00											
11.00											
12.00											
13.00											
14.00											
15.00											
16.00											
17.00											

18.00											
19.00											
20.00											
21.00											
22.00											
23.00											
24.00											
Sub Total											
				TOTAL		**+ OR -**			**TOTAL**		

Item 21: Health Center Discharge Summary Sheet

Print Name: _____

Signature: _____

Date and time completion: _____

HEALTH CENTER DISCHARGE SUMMARY SHEET	
Name:	**MRN:**
Ward: **Bed number:**	**Date of admission:** **Date of discharge:**
Hospital Course:	
Diagnosis/Diagnoses:	
Diagnostic procedures and laboratory findings:	
Condition on discharge: ☐ **Cured** ☐ **Improved** ☐ **No change** ☐ **Worse** ☐ **Left against medical advice**	

Instructions for home:

Diet:

Activity:

Specific care needs:

Sick leave recommended (if relevant):

Medications:

Drug:	**Dosage:**	**Frequency:**
1.		
2.		
3.		
4.		

Follow up care:

Appointment date:	**Place:**	**To be seen by:**
1.		
2.		

Form completed by:

Designation/Position:	**Patient/Care giver name:**
Signature:	**Signature:**
Date:	**Date:**

One copy of form should be given to the patient or caregiver and a second copy should be filed in the patient's Medical Record.

Item 22: Post Mortem Request Form

POST MORTEM REQUEST FORM	
Section A: Identification	
MRN:	Name of deceased:
Age: Sex: Occupation:	Date of Death: / /
Address:- Region: Zone: Woreda/Sub-city: Kebele: House No.: Tel:	
Brief history of the deceased:	
Physical examination findings:	
Possible cause(s) of death:	
Reason for Referral:	
Referring Institution:	
Requesting Physician: Name: Signature: Date: / /	
*****Responsible professional must fill and send the following note to requesting institution …✂… Index No._____	
To (Requesting Institution):	
Dead body received by: Name: Position: Signature: Date: / / Time:	

Item 23: Death Report

DEATH REPORT			
Health Facility:		Region:	City:
Deceased Name: Age (Year): Sex: ❑ F ❑ M			
Date of admission:	Date / Month / Year	Time	Hrs : Min
Date of death :	Date / Month / Year	Time	Hrs : Min
Cause Of Death		Approximate Interval Between Onset And Death	
I. Disease or condition leading to death*: - Due to (as consequence or) **a)**			
b)			
Antecedent cause: Morbid conditions, if any, giving rise to the above cause, stating: - Due to (as a consequence or) **c)**			
d)			
** This does not mean the mode of dying, e.g. heart failure, respiratory failure. it means the disease, injury or complication that caused death.*			
II. Other significant conditions contributing to the death, but not related to the disease or condition causing it			
Management/Treatment given :			
Consider Collecting the following Information			
If the deceased is a female, was she:			
	Not pregnant		
	Pregnant at the time of death (Approximate gestation age _____ (WKS))		
	During labour (stage of labour _____)		
	Unknown pregnancy status		
If the deceased is a newborn: ☐ Still birth ☐ Death after birth		Weight: . . . . . g ☐ Not Known	
Reported by (Dr./ Mr/Ms): _____		**Profession :** _____	
Signature: _____		**Date :** / /	
Approved by:		**Medical Director:**	

Item 24: Sample Referral and Feedback Form

Section 1: Patient Details (to be completed by Referral Unit)			
Name:			
MRN:			
Date of birth/Age:		Next of kin name:	
Address:		Next of kin address:	
Telephone number:		Next of kin telephone number:	

Section 2: Administrative Details (to be completed by Referral Unit)	
Name of Referring Unit:	Name of Receiving Unit:
Name of Liaison Officer:	Name of Liaison Officer:
Contact Telephone Number:	Contact Telephone Number:
Date referral made:	Date referral received (to be completed by Receiving Unit):

Section 3:Referring Clinician Information (to be completed by Referral Unit)	
Name of Referring Clinician:	Name of Consultant (if relevant):
Profession/Qualifications:	Address:
Registration number:	Telephone number:
Address:	
Telephone number:	
Signature:	

Section 4: Clinical Information (to be completed by Referral Unit)	
Reason for referral:	
Basic history and statement of the problem:	
Physical examination findings:	
Results of investigations performed:	
Treatments given:	
Current medication:	
Social/psychological factors:	
Known allergies:	
Any other relevant information:	

Section 5: Feedback information (to be completed by Receiving Unit)	
Summary of history:	
Physical examination:	
Investigation results:	
Diagnosis:	
Treatment given:	
Management plan/advise:	
Follow up appointment date (if given):	
Any other relevant information:	

Section 6: Receiving Clinician Information (to be completed by Receiving Unit)	
Name of Receiving Clinician:	Name of Consultant (if relevant)
Profession/Qualifications:	Address:
Registration number:	Telephone number:
Address:	
Telephone number:	
Signature:	

7

Nursing and Midwifery Care Services

Table of Contents

Box

Abbreviations/Acronyms

ADPIE Assessment, Diagnosis, Planning, Implementation andEvaluation
EFMHACA Ethiopian Food, Medicines and Healthcare Administration and Control Authority
HAD Health Development Armey
EHRIG Ethiopian Hospital Reform Implementation Guideline
FMOH Federal Ministry of Health
HC Health Center
HEW Health Extension Worker
HO Health Officer
PES Problem, Etiology, Sign and Symptom
RHB Regional Health Bureau
SMT Senior Management Team

Section 1 Introduction

Nursing and midwifery services are expected to provide the public with competent, safe and ethical nursing and midwifery care for which the nurses and midwives are fully accountable and responsible for their entire practice. Nurses and midwives are professionals who are committed to the development and implementation of practice standards through ongoing acquisition, application and evaluation of relevant knowledge, skills, attitudes and judgment.

Nursing and Midwifery services are an essential part of the hospital system in improving the health outcomes of individuals, families and communities. As individuals, members and coordinators of inter-professional teams; nurses and midwives bring people–centred care close to the communities where they are needed most. Thereby contributing greatly in improving the health outcomes of those under their care as well as improving the overall cost effectiveness of health care services.

Nursing /Midwifery staff work closely with their own team and with other professionals, making sure patients' care and treatment is coordinated, is of a high standard and has the best possible outcome. Furthermore, that they lead by example, develop themselves and other staff, and influence the way care is given in a manner that is open, and, responds to individual needs.

Nursing/Midwifery is expected to give care with dignity and humanity, understanding the individual's needs, show compassion and sensitivity,and, provide care in a way that respects all people equally. A supportive and competent nursing/midwifery workforce is required to ensure quality services in any health facility.

Section 2 Operational Standards for Nursing/Midwifery Services Management

1. The hospital has established nursing/midwifery service management structuresand job descriptions that detail the roles and responsibilities of each nursing and midwifery professional, including reporting relationships.
2. The hospital has a nursing and midwifery workforce plan that addresses nurse /midwife staffing requirements and sets minimum nurse /midwife to patient ratios in each service area.

3. The hospital has written policies describing the responsibilities of nurses and midwives for the nursing/midwifery process including the admission assessment, planning, implementation and evaluation of nursing/midwifery care.
4. All admitted and emergency patients/clients have a nursing/midwifery care plan that describes holistic nursing/midwifery interventions to address their needs. The plan is regularly reviewed and updated as required.
5. All hospital nurses/midwives comply with the professional code of conduct and ethics which governs their professional practice.
6. The hospital has established guidelines for verbal and written communication about patient/client care that involves nurses/midwives and their patients/clients, families, other case team professionals of the disciples, including verbal orders and timely documentation of accomplished activities.
7. The hospital has standardized procedures for the safe and proper administration of medications by nurses or designated clinical staff.
8. The hospital has established nursing/midwifery care practice audit programme,including the documentation of completed audits and resulting practice improvements.
9. The hospital implements regular nursing/midwifery eight hours' shift, rounds, and central medication cabinet or room.
10. The hospital has a centralized nursing/midwifery station set-up in each ward with adequate space, equipment and consumables.

Section 3 Implementation Guidelines

3.1. Organizational Support for Nursing/Midwifery Function

Nurses/midwives play a pivotal role in any health facility. Encompassing the largest workforce in hospitals, nurses/midwives act as direct caregivers who serve a hospital twenty-four hours a day, seven days a week. This gives a unique perspective on hospital operations. Nurses/midwives should be allowed to assume managerial roles that will enable them to make decisions affecting patient/client care at the case team, unit and department levels.

3.1.1. Organizational structure of the Nursing and Midwifery Service

Nurses and midwives play a pivotal role in any hospital. Encompassing the largest workforce in a hospital, nurses/midwives act as direct caregivers who serve a hospital twenty-four hours a day, seven days a week. This gives

nurses/midwives a unique perspective on both patient care and hospital operations. Given the complexities of hospital management and the direct relationship between hospital operations and patient care, nursing/midwifery responsibilities have expanded to include a greater managerial role. This includes assuming an increased role in hospital leadership and contributing to effective decision-making within the overall hospital structure, as well as within case teams, wards/units or departments.

Nursing/Midwife Director is a member of the senior management team (SMT) and responsible for the overall function of nursing and midwifery activities in the hospital. Head nurses/midwivesare responsible for the overall function of nursing and midwifery activities in each ward and accountable to the Nursing/Midwifery Director.Supervisor Nurses: are responsible for the overall function of nursing and midwifery activities in the hospital on duty and are accountable to the Nursing/Midwifery Director.

3.1.2 Team Work

Nursing practice requires teamwork, an on-going interaction between members of the multidisciplinary team, the patients, patients' relatives and hospital managers. In working with colleagues and hospital management, the nurse must:

- collaborate with the patient and their caregivers,
- work with colleagues in the formulation of overall goals, plans and decisions related to patients,
- work with other members of the multidisciplinary team in caring for patients,
- consult with other health care providers on patient care, as appropriate,
- make referrals, including provisions for continuity of care, as appropriate,
- collaborate with other disciplines in teaching, consultation, management, and research activities as opportunities arise,
- Participate in an organized Health Development Army, and
- Nurses/midwives should assume responsibility for monitoring, evaluating and reporting of their activities within the Health Development Army.

It is essential that within a case team, ward/unit or department there exists a clear management structure that delineates the ultimate roles and responsibilities within the given team and clinical setting, determining who has clear authority over certain decision-making processes.

3.1.3 Supervision and Delegation

Clinical supervision is "a formal process of professional support and learning which enables individual practitioners to develop knowledge and competence,

assume responsibility for their own practice and enhance client/patient protection and safety of care".

Nurses/midwives may delegate tasks and responsibilities to junior nurses/midwives, student nurses/midwives or parallel position nurses/midwives. Before delegating, he/she must ensure that anyone they delegate to, is able to carry out the responsibility of what she/he delegates, and must provide adequate supervision to ensure that the outcome of any delegated task meets required standards.

3.1.4 Nursing/Midwifery Workforce Plan

Shortages of appropriate nursing/midwifery staff or inappropriate distribution of available staff adversely affects the quality of patient care. Inappropriate workforce planning has been related to staff dissatisfaction and nurse/midwife turnover, patient mortality, hospital-acquired infections, and the risk of needle-stick injuries.[2]

The hospital should establish a nursing/midwifery workforce plan that:

- establishes minimum nurse/midwife to patient ratios for each inpatient ward/service, taking the skill mix of staff into consideration,
- identifies priority areas where the nurse/midwife count must at all times meet the minimum ratio requirements (for example intensive care/high dependency units, post-operative recovery, emergency department, labour and delivery etc.), and
- Establishes a procedure for transferring nurses/midwives across clinical settings, or calling in extra nurses/midwives from home in order to maintain minimum nurse to patient ratios, especially in thepriority areas.

To determine the minimum nurse/midwife staff ratio the following factors to be considered include:

- the severity of the clinical condition of patients,
- the intensity of nursing/midwifery care needed, for example the frequency of nursing interventions such as observations, medication administration, wound care, stoma care, bathing etc.,
- the number of admissions and discharges,

[2]Needlemann, Jack; Buerhaus, Peter; Mattke, Soeren; Steward, Maureen; Zelevinsky, Katya; Nurse-Staffing Levels and the Quality of Care in Hospitals, N Engl J Med. 2002; 346 (22): 1715 – 1722

- The availability of technology (patient monitors, beepers etc.),
- The skill mix of staff, availability and responsibilities of caregivers.

There should be a minimum of a registered professional nurse/midwife in-charge of each ward/unit that has relevant knowledge, skills and experience with compassion and respect to manage a ward/unit and the nursing /midwifery staff therein. The nurse/midwife management team, together with hospital management should determine the minimum nurse/midwife to patient ratio for the unit. The ratio should be kept under review and amended as necessary.

The nursing/midwifery workforce plan should also consider the role of nurses/midwives in outpatient and specialist clinics and the nursing/midwifery contribution to hospital management and governance structures (such as quality committees, infection prevention committees etc.).

3.1.5 Provision of Resources

Hospitals should ensure that nurses/midwives have access to and are trained on how to use resources (including equipment and consumables) correctly and cost-effectively. Nurses/midwives are responsible for forecasting stock-outs of nursing/midwifery formats and other consumables on the ward, and should inform the appropriate party of the need for additional resources to prevent stock out.

3.2. Nursing/Midwifery Process

The nursing/midwifery care process is an organized, systematic and holistic approach through which nursing/midwifery care provision is organized to achieve **patient/client**centered care. The nursing/midwifery process involves Assessment, Diagnosis, Planning, Implementation and Evaluation of care (ADPIE). This should be done in collaboration with the patient/client, family and community.Assessment: the nurse/midwife collects comprehensive data pertinent to the patients'/client's health or situation.

3.2.1 Admission Assessment

A nurse/midwife collects and documents critical data regarding patient/client health status. This assessment remains accessible to the entire health care team during the course of the client/patient stay and beyond, in order to assist the team in determining proper client care and treatment. In the nursing assessment, the nurse gathers and examines both *Subjective* and *Objective* data.

- *Subjective data* are what the patient/client actually states (e.g. "I'm tired"). These are his/her feelings and perceptions.
- *Objective data are concrete, observable information and* investigation.

.Examples:

Subjective data	***Objective data:***
• **"I feel sick."** • **"I have a stabbing pain in my side."** • **"I wish I were home."** • **"I feel like nobody likes me."**	• Blood pressure of 110/70 mm Hg. • Rash on right arm • Walks with a limp • Ate all of his breakfast • Urinated 150 ml clear urine

3.2.2 Diagnosis/ Problem Identification

Diagnosis is a clinical judgment about an individual, family or community, response to actual or potential health problems. It provides a basis for the selection of nursing interventions to achieve outcomes for which the nurse/midwife is accountable.

There are two types of Diagnoses/Problems

a) Nursing/midwifery diagnoses

When choosing the nursing/midwifery diagnoses for a particular patient, the nurse/midwife must first identify the commonalities among the assessment data collected. These common features lead to the categorization of related data that reveal the existence of a problem and the need for nursing/midwifery intervention. The patient has identified problems then defined in the nursing diagnoses. The most commonly selected nursing/midwifery diagnoses compiled and categorized by NANDA. It is important to remember that nursing diagnoses differs from the physician's diagnosis as illustrated in Box A.

Box A Physician vs Nursing Diagnosis

Physician diagnosis is disease focused, for example:

"Ato Yidnek has pain and swelling in all his joints. Diagnostic studies indicate that he has rheumatoid arthritis. Anti-inflammatory drugs will be prescribed to treat the rheumatoid arthritis"

Nursing diagnosis is holistic, considering both the problem and its effect on the patient and family, for example:

'Ato Yidnek has pain and swelling in all his joints making it difficult to feed and dress himself. He states that he feels worthless when he cannot even feed himself'.

Nursing/midwifery diagnoses are an actual or potential health problem that focuses upon the human response of an individual or group for which nurses/midwives can legally prescribe definitive interventions independently.

Nursing diagnoses are those problems for which nurses can legally prescribe definitive interventions independently.

The nursing/midwifery diagnosis forms the basis for providing nursing care. Some factors to consider when writing a nursing diagnosis include:

- Self-care limitations or impaired functioning related to mental and *emotional distress or mental retardation;*
- *Emotional stress or crisis as components of health problems, pain and disability;*
- *Problems related to emotions such as anxiety, aggression, sadness, loneliness, and grief;*

- *Behaviors and mental states that indicate the patient is in a danger to self or others or has a severe disability;*
- *Interpersonal, socio/ethnic/cultural, spiritual or environmental circumstances or events which have an effect on the mental and emotional well-being of the patient family or community;*
- *Act*ual nursing diagnoses should be written as a three-part statement(s) which includes:

1. The problem (P)
2. Its cause or etiology (E)
3. Signs and symptoms (**S**)

The PES format describes the problem and its etiology, together with data (signs and symptoms) that validate the chosen diagnosis. To write a diagnostic statement for an actual nursing diagnosis, link the problem and its cause by using "related to" then add "as manifested by" or "as evidenced by" and state the major signs and symptoms that validate the diagnosis.

Example:

Problem Etiology (cause)
Symptom/Sign

"I*neffective airway clearance related to incisional pain as manifested by poor cough effort'*

Potential Diagnosis should be written as a two part statements which include: problem and etiology.

Nurses/midwives may also note that a patient/client has certain risk factors that put him/her at risk of a particular nursing/midwifery diagnosis. These risk factors and the related 'potential diagnosis' should be documented so that the nursing care plan can include actions to prevent the problem. For example: 'at risk of impaired skin integrity due to patients' age, weight, immobility and confinement to bed'. The care plan would then include action to prevent irritated or broken skin such as regular turning, massage etc.).

b) **Collaborative Problems**

In addition to nursing/midwifery diagnoses and their related nursing/midwifery interventions, nursing/midwifery practice involves certain situations and interventions that do not fall within the definition of nursing diagnoses. These activities pertain to potential problems or complications that are medical in origin and require collaborative interventions with the physician and other members of the health care team. The term *collaborative problem* is used to identify these situations. Collaborative problems are certain physiologic complications that nurses/midwives monitor to detect changes in status or the onset of complications. Nurses/midwives manage collaborative problems using physician prescribed and nursing/midwifery prescribed interventions to minimize complications. A primary focus of the nurse/midwife when treating collaborative problems is monitoring the patient for the onset of complications or changes in the status of existing complications. The complications are usually related to the patient's disease process, treatments, medications, or diagnostic studies. The nurse/midwife prescribes nursing interventions that are appropriate for managing the complications and implements the treatments prescribed by the physician.

3.2.3 Care Plan

After the nursing diagnoses and collaborative problems have been identified, they are recorded on the plan of nursing care.

The care plan is a record of interventions that will address the identified problems. It should be based on the problem identification and the diagnoses, and should be individualized or tailored to the patient's/community's health problems**.** The care plan guides each nurse/midwife to intervene in a manner congruent with individual or community needs and goals and provides outcome criteria for measurement of progress.

This phase entails the following:

1. Assigning priorities to the nursing/midwifery diagnoses and collaborative problems.

2. Specifying expected outcomes.
3. Specifying the immediate, intermediate, and long-term goals of nursing action.
4. Identifying specific nursing/midwifery interventions appropriate for attaining the outcomes.
5. Identifying interdependent interventions.
6. Documenting the nursing/midwifery diagnoses, collaborative problems, expected outcomes, nursing goals, and nursing/midwifery interventions on the plan of nursing care.
7. Communicating to appropriate personnel any assessment data that point to health needs that can best be met by other members of the health care team.

The plan of nursing/midwifery care serves as the basis for implementation:
The immediate, intermediate, and long-term goals are used, and, are the focus for the implementation of the designated nursing interventions.The following aspects of nursing care should be considered when developing and implementing a nursing care plan:

1. Therapeutic relationship

The development of a therapeutic relationship between the nurse/midwife and the patient/client promotes engagement and motivation for self-care. It contributes to patient/client cooperation with the nurse/midwife, in the preventive and therapeutic regime and this improves patient/client bonding. It includes self-introduction, orientation of the room, explanation of procedures, etc.

2. Counseling

The counseling role is part of nursing/midwifery practice and reinforces healthy behavior and interaction patterns, helps the individual to modify or discontinue unhealthy ones and promotes the individual and social integration.

3. Promoting self-care/group activities

The nurse/midwife needs to ensure that:

- *The self-care interventions assist the client in meeting their unique needs and assuming personal responsibility for activities.*
- *The group interventions are aimed at maintaining and improving the community* functional status, and for referral purposes to the community and social support network resources.

4. Psychobiological interventions

Psychobiological interventions provide the foundation for the treatment regime, clients' feelings and concerns.

A sample care plan can be found in Appendix B.

3.2.4. Implementation of the Plan

The care plan should be implemented by all nurses/midwives who care for patients/clients. Hence, all staff should be familiar with the care plan and should ensure that the activities described in the care plan are carried out during each shift.

In implementing the care plans, nurses/midwives should use a wide range of interventions designed to promote, maintain, and restore mental and physical health.

The implementation phase of the nursing/midwifery process involves carrying out the proposed plan of nursing care. The nurse/midwife is responsible for the implementation. However, the patient and the family are involved, other members of the nursing/midwiferyteam or other members of the health care team as appropriate to carry out the care. The nurse/midwife coordinates the activities of all those involved in implementation so that the schedule of activities facilitates the patient's recovery.

Implementation includes direct or indirect execution of the planned interventions. It focuses on resolving the patient's nursing/midwifery diagnoses and collaborative problems and achieving expected outcomes, thus meeting the patient's health needs. Included among nursing/midwifery interventions are assisting with hygiene; promoting physical and psychological comfort;

supporting respiratory and elimination functions; facilitating the ingestion of food, fluids, and nutrients; managing the patient's immediate surroundings; providing health teaching; promoting a therapeutic relationship; and carrying out a variety of therapeutic nursing/midwifery activities. Judgment, critical thinking, and good decision-making skills are essential in the selection of appropriate scientifically and ethically based nursing/midwifery interventions. All nursing/midwifery interventions are patient-focused and outcome-directed and implemented with compassion, confidence and a willingness to accept and understand the patient's responses. Although many nursing/midwifery actions are independent, others are interdependent, such as carrying out prescribed treatments, administering medications and therapies, and collaborating with other health care team members to accomplish specific expected outcomes and to monitor and manage potential complications. Such interdependent functioning is just that—interdependent. Requests or orders from other health care team members should not be followed blindly but should be assessed critically and questioned when necessary. The implementation phase of the nursing process ends when the nursing interventions have been completed.

The care plan should be implemented by all nurses/midwives for patients/client care. Hence, all staff should be familiar with the care plan and should ensure that the activity described in the care plan is carried out during each shift.

In implementing the care plans, nurses/midwives should use a wide range of interventions designed to promote, maintain, and restore mental and physical health.

The interventions/implementation should be:

- *For each admitted patient, the nursing/midwifery process form should be attached and the assessment should be completed immediately after admission.*
- *Based on current knowledge and principles of relevant preventive and therapeutic modalities.*
- *Selected based on the needs and /or desires of the individual or community.*

- *Selected according to the nurse's level of practice, education and certification.*
- *Implemented within the established plan of care.*
- *Performed in a safe, ethical and appropriate manner.*
- *Adapted to changing patient needs and situations.*
- *Reviewed in order to recognize the progress or lack of progress and, reassignment of priorities is required towards identified goals.*
- *Nurses/midwives should document progress reports at the end of each shift which* should consist of nursing/midwifery interventions, patient/client responses, patients/clients emotional adjustment and rendered patient/client education.

3.2.5. Evaluation of the plan

Evaluation is the process of determining the extent to which the set goals have been achieved. The nurse/midwife must evaluate the results to determine whether the interventions were effective.

Nursing/midwifery care is a dynamic process involving change in the patients/clients health status over time, giving rise to the need for new data, different diagnoses, and modifications in the plan of care.

As new problems arise they should be entered on the Problem Index List and related goals and activities should be established to address the problem**.** Similarly, if a problemis resolved**,** this should be recorded on the Problem Index List to indicate that goals and activities related to that particular problem are no longer necessary.

- Evaluation involves the following activities:

- Assessing current patient status
- Evaluating goal achievement
- Determining variables affecting goal achievement
- Continuing or modifying plan of care /terminating nursing care.

The care plan should be regularly reviewed and modified as necessary and should consider the following questions:

1. Have the goals of the care plan been achieved?
2. If not, why not? Were the goals realistic?
3. Was the client/patient committed to the goals?
4. Was there enough time to achieve the goals?

5. Did other problems arise that impeded progress?
6. Which interventions were consistently performed as prescribed?
7. Have any new problems developed that have not addressed?
8. Could more have been achieved than originally hoped?
9. Should new goals be set?
10. The action plan should be checked at intervals, randomly by the nurse supervisors/head nurses and should be documented.

3.2.6. Accountability and Responsibility

1. The nurse/midwife remains accountable for his/her own practice as well as for the delivery of the care plan and for ensuring that the overall objectives are met.
2. An aspect of care may be delegated to a person who the nurse/midwife judges as having the competence to undertake it. It is the employer's responsibility to ensure that the employee has sufficient education and training to competently undertake the aspects of care, which were delegated. Having delegated an aspect of care, the person to whom it is now delegated will be responsible to their line manager for the performance of the task. The nurse/midwife delegating an aspect of care has a continuing responsibility to supervise, judge and evaluate the appropriateness of the delegation.
3. Reassessing the condition of the person in their care at appropriate intervals and determining that it remains stable and predictable;
4. Observing the competence of the caregiver(s) and determining that they remain competent to perform the delegated task of care, safely and effectively.

3.3. Nurses/Midwives' Continuous Professional Development

Professional development /education contain the following four steps to improve the quality of care:

1) *Self-Assessment* of your learning needs,
2) *Planning* your learning goals,
3) *Implementation* of your plan, and
4) *Self-Evaluation* of what you have achieved.

This process is design to encourage nurses to reflect, in an effort to gain more from their learning. It is expected that nurses/midwives are learning on a regular basis simply by virtue of practicing their profession. The Portfolio provides a

format for nurses to track all of those day-to-day learning activities in the Learning Log. These activities might include:

- In-service training
- Grand rounds
- Reading journal articles
- Online searches on nursing related practice areas
- Conferences /workshops
- Discussion with colleagues and/**or** physicians

3.3.1. Nurses need to maintain their professional education in order to:

- Support progression throughout their nursing/midwifery career.
- Serve as an evaluation tool that guides professional development.
- Offer a showcase for nurse performances related to essential knowledge, skills and dispositions.
- Allow the nurse to demonstrate growth and proficiency in regard to operational standards of nursing care practice.
- Facilitate collaboration and interaction through sharing ofonline projects and discussion of teaching skills.
- Provide a forum for publication and dissemination of artifacts that support instruction.
- Meet regulatory requirements.
- The hospitals should create or open possibilities for the nursing /midwifery service for training and facilitate accordingly.

3.4. Communication and Documentation

The hospital should establish clear guidelines for both verbal and written forms of communication for in-patient, Emergency; Outpatient and Delivery Case Teams.

a) ***Written communication****:* This includes the written documentation of all findings, progress, care and treatment provided to the client by the multidisciplinary team. A written record permits immediate access to all information related to the patient's care and facilitates the exchange of information between all members of the case team.

b) ***Verbal communication***: this entails the act of reporting and conversing with other members of the health care team regarding the client's progress and status.

c) ***Verbal orders will only accepted in emergencies.*** The nurse/midwife receiving the verbal order is responsible to document the order immediately.

3.4. 1. Medical Record Documentation

The following items are used by nurses/midwives to document a patient's course of treatment. It is the nurse's/midwife's responsibility to ensure that a patient's medical record is complete, containing all the necessary forms in the proper sequence. The forms are intended to guide the entire medical team, and, they will be part of the client's/patients permanent medical record.

Inpatient Clinical forms include:
Intravenous Fluid Administration Record,

- Routine Observation Form, and
- Medication Administration Record
- Nursing Process forms

Family Folder for the individual/ family includes:

- Antenatal, post-natal and delivery
- Immunization card
- Family Planning card
- IMNCI chart

Samples of the above form are presents in *Chapter 3 Medical Records Management*
It is the nurse/midwife responsibilities to chart on the appropriate form and to make sure that the information is entered accurately and in a timely manner.

3.4.2. Patient Education:

Nurses should give health education for all patients, also incorporate family members and other caregivers who often play a strong role in facilitating patient care in coordination with the medical staff. One suggestion to improve the family and staff relationship is with the use of a Patient Caregiver Contract, whereby the relationship is formalized between families/caregivers and medical staff.

3.4.3. Medication Management

It is the nurse's responsibility to safely administer the medications to a patient as ordered by the physician. Nurses should be aware of the desired outcome, dosage, preparation and side effects of each prescribed medication.

Procedure

1) *Physician Order***:** A physician's order is required for the administration of all medications. There are several types of orders:

- *Standing order:* To be carried out as specified until it is canceled by another order (including PRN orders).

- *Single order:* To be carried out only once, as directed.

- *Stat order:* To be carried out immediately.

- *Verbal order:* An order that has been communicated through the phone or verbally. These orders are reserved for times when the physician is unable to reach the patient's medical record. Verbal orders can only be taken by a nurse, who must immediately transcribe the verbal order into the Physician Order Sheet. Verbal orders from a physician to a nurse must be told to 2 nurses simultaneously in order to ensure that instructions are clearly understood and verifiable. *All verbal orders must be co-signed by the physician within 24 hours***.**

Physician orders need to include the following information when they are transcribed into the Physician Order Sheet in order to be considered complete. Orders are not to be carried out unless all of these elements are present. If an element is missing, the physician who issued the order should be called to complete the order.

- *Date and time*: When the order was written.
- *Full name of the medication:* Either the chemical or generic name can be used without abbreviations.
- *Dosage*: Specify the amount of medicine to be given. Abbreviations are discouraged.
- *Concentration*: If the medication is to be diluted in IV fluid, the amount and type of diluent/s ordered.

- *Duration*: If the medication is to be given over a period of time, such as IV administrations, the duration of the infusion ordered should be recorded by the physician. Nurses should then translate and document the duration of infusion into number of (micro) drops per minute.
- *Time and frequency:* The time of day and how often a medication is to be given, as ordered by the physician. The nurse who transcribes the order will identify the specific time that the medication is to be given by following a standardized schedule.
- *Route:* For medications that can be given in several ways, the route of administration needs to be clearly written.
- *Physician Signature:* Is to be clearly written immediately following the order.

2) *Transcribing the Order:* Medication orders are transcribed by the nurse from the physician order sheet to the Medication Administration Record. The nurse will document that the order has been transcribed by putting a signature next to the order.

The nurse is responsible for questioning the physician regarding any medication order or element of an order that is in his/her judgment an error. The perceived error may be in the drug ordered, dosage, route, time and/or frequency to be given.

3) *Administration of Medications:*The following steps should be followed by the nurse when administering medications. Two processes are outlined which differ based on whether the medication is stored at the patient's bedside or in a central cabinet. There are three distinct steps to administering medications: preparation, administration and documentation. Each step requires safety checks to ensure that the right drug is given to the right patient.

<u>Medications at the Bedside</u>

- The nurse brings the Medication Administration Record to the patient's bedside.
- The nurse checks the prescribed medication from the patient's bedside to the Medication Administration Record *three times* to ensure that it is the proper medication:
    1. When reaching for the container of medication,

2. Immediately prior to the pouring the medication, and
3. When returning the container to its proper location.

Medications in a Cabinet

- The nurse brings the Medication Administration Record to the cabinet.
- The nurse checks the prescribed medication from the cabinet to Medication Administration Record *three times* to ensure that it is the proper medication:
    1. When reaching for the container of medication,
    2. Immediately prior to the pouring the medication, and
    3. When returning the container to its proper location.
- Medications should be prepared one patient at a time. Each medication for a single patient should be organized into a group for that individual patient, prior to dispensing medications for another patient.
- When medications are to be given to more than one patient, the medication cup/container should be clearly marked with each bed number.
- Before administering medication, the nurse should cross-reference the bed number (on cup/container) with the bed number and name listed on the Medication Administration Record.

4) *Administration***:**

- The nurse who prepares the medication should always be the nurse who administers the medication.
- During administration, medications should never be out of the sight of the administering nurse.
- It is the nurse's responsibility to confirm that they are giving the correct drug to the correct patient. When the nurse arrives at the patient's bedside, the nurse must confirm using two methods that the patient is properly identified.
- **Check the name on the Medication Administration Record with the patient's posted name.**
- **Ask the patient to repeat their name.**
- Oncethe correct patient is verified, administer the medication. If it is an oral medication do not leave it for the patient to take later. The nurse needs to observe all medications being taken

to assure that the medication has been adequately administered.

- If a patient refuses a medication, the physician should be notified and it should be clearly documented in the medical record.

5) *Documentation:* Immediately following the administration of a patient's medication, the nurse who administered the medication must document on the Medication Administration Record that the medication has been given. The nurse must document the time that each drug was given and then sign and initial the record.

3.5. Nursing/midwifery practice audit programme

The nursing/midwifery practice audit programme should be part of the overall hospital quality improvement programme.

Nursing/midwifery practice audit is one of the tools to ensure the clinical effectiveness of nursing/midwifery care patients/clients receive. See chapter 19 for more information on clinical audit process.

3.5.1. Purposes of Nursing Audit

- Evaluates nursing/midwifery care patients/clients receive.
- Promotes quality improvement of nursing/midwifery care.
- Improves quality of record keeping.
- Focuses on care provided and not on care provider.
- Contributes to research.

3.5.2. There are two methods of Nursing/midwifery audit:

1. Retrospective Review - this refers to an in-depth assessment of the quality of care after the patient has been discharged. The patient's chart is the source of data.

Retrospective audit is a method for evaluating the quality of nursing care by examining the nursing care, as it is reflected in the patient care records for discharged patients. In this type of audit, specific behaviors are described then they are converted into questions and the examiner looks for answers in the record. For example, the examiner looks through the patient's records and asks:

- Was the problem solving process used in planning nursing care?

- Was patient data collected in a systematic manner?
- Was a description of patient's pre-hospital routines included?
- Were laboratory test results used in planning care?
- Did the nurse perform a physical assessment? How was the information used?
- Did the nurse write nursing orders? And so on.

2. Concurrent Review - this refers to the evaluations conducted on behalf of patients who are still undergoing care. It includes assessing the patient at the bedside in relation to a pre-determined criterion; interviewing the staff responsible for this care and reviewing the patient's record and care plan.

3.6.3. Criteria Development Method:

- Define patient population
- Identify a time framework for measuring outcomes of care
- Identify commonly recurring nursing problems presented by the defined patient population
- State patient outcome criteria
- State acceptable degree of goal achievement
- Specify the source of information
- Determine the design and type of data collection tool

Section 4 Implementation Checklist and Indicators

4.1 Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Nursing /Midwifery care standards have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in Appendix E of *Chapter 20Monitoring and Reporting.*

4.2 Implementation Checklist

The following Table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. This tool is not meant to measure attainment of each Operational Standard, but rather to provide a checklist to record implementation activities.

Table 1 Nursing /Midwifery Care Standards Checklist

		Yes	No
1.	There is a system for coordinating and managing nursing staff.		
2.	Job descriptions for nursing positions have been developed.		
3.	A nursing workforce plan has been developed.		
4.	The hospital's nurse staff requirements are defined in the nursing workforce plan.		
5.	Nurse to patient ratios for each service area are defined in the nursing workforce plan.		
6.	There is a written policy for the nursing process.		
7.	Nurses complete nursing admission assessments for inpatients.		
8.	Nurses complete a nursing care plan for inpatients.		
9.	There are written guidelines for nursing verbal and written communication.		
10.	There are written guidelines for medication administration.		
11.	There is an established nursing/midwifery care practice audit programme.		
12.	Nurses implement regular nursing/midwifery hours (eight)' shift.		
13.	Nurses conduct nursing care hourly rounds.		
14.	There is a central medication room or cabinet.		
15.	There is a centralized nursing/midwifery station set-up in each ward.		

4.3 Nursing/Midwifery Care Standards' Indicators

In addition, the following indicators should be monitored on a regular basis to assess the effectiveness/outcomes of implementation of the recommendations provided in this chapter.

Table 2 Nursing/Midwifery Care Standards Indicators

S/N	Indicators	Formula	Frequency	Comment
1.	Pressure sore incident rate	Number of pressure sores/number of admissions*100	Quarterly	HMIS
2.	Attrition rate of nursing staff	Total number of nurses leaving/total number of nurses at beginning of reporting period * 100	Quarterly	HMIS
3.	Attrition rate of midwifery staff	Total number of midwives leaving/total number of nurses at beginning of reporting period * 100	Quarterly	HMIS
4.	a) Cumulative number of nursing staff who received in service training b) % of nursing staff who received in service training	a) Total number of nursing staff with in-service training from the beginning of year to the end of reporting period b) Cumulative number of nursing staff who received training/ Total number of nurses at beginning of year * 100	Quarterly	HMIS
5.	a) Cumulative number of midwifery staff who received in service training b) % of midwifery staff who received in service training	a) Total number of midwifery staff with in-service training from the beginning of year to the end of reporting period b) Cumulative number of midwifery staff who received training/ Total number of nurses at beginning of year * 100	Quarterly	HMIS
6.	In patient satisfaction survey : % of respondents who answer 'always or usually' to the following questions: a) During this health facility stay, how often did nurses treat you with courtesy and respect? b) During this health facility stay, how often did nurses listen carefully to you? c) During this health facility stay, how often did nurses explain things in a way you could understand?	Total number of inpatients who respond 'always or usually' to the questions listed/ Total number of inpatients respondents*100	Biannual	Survey tool

Source Documents

1. Aiken, LH et al (2002). Hospital Nurse Staffing and patient Mortality, Nurse Burnout and Job Dissatisfaction. *Journal of American Medical Administration*. 288(16):1987-93.
2. Arnold, E. and Boggs, K. (1999). *Interpersonal relationships: Professional communication skills for nurses*. 3rd Edition. Philadelphia: W.W. Saunders.
3. Audit Commission. (2001). *Acute Hospital Portfolio- Ward staffing*. London: Audit Commission.
4. Buchan, J. (2004). *A Certain Ratio? Minimum Staffing Ratios in Nursing*. London: Royal College of Nurses.
5. Clarke, Sean P.; Sloane, Douglas M.; Aiken, Linda H.; Effects of Hospital Staffing and Organizational Climate on Needle stick Injuries to Nurses. *American Journal of Public Health*, 2002; 92 (7): 1115 – 1119.
6. College of Registered Nurses of Nova Scotia. (2004). *Standards of Nursing Practice.* Halifax: College of Registered Nurses of Nova Scotia.
7. Cook, D, and Sportsman, S. (2005). *DSHS Nursing Standards of Care and Nursing Standards of Professional Performance*.Texas Department of State Health Services.
8. Department of Health. (1993). *A Vision for the Future*. London: HMSO.
9. Department of Health. (1997). *The New NHS: Modern, Dependable*. London: The Stationery Office.
10. Department of Health. (2000). *National Minimum Standards*. London: The Stationery Office.
11. Department of Health. (2001). Good practice in consent implementation guide: consent to examination or treatment. Retrieved from: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4005762 on 02/03/09.
12. Dougherty, L, and Lister, S. (Eds) (2008) *the Royal Marsden Hospital Manual of Clinical Nursing Procedures.* 7th Edition. Oxford (UK): Wiley-Blackwell.
13. Department of Health. (2003). *Building on the best: choice, responsiveness and equality in the NHS*. London: The Stationery Office.
14. FEPI (2009) Code of Ethics and Conduct for European Nursing: Protecting the public and ensuring patient safety. European Council of Nursing Regulators. Retrieved from: http://www.fepi.org/userfiles/file/FEPI_Code_of_Ethics_and_Conducts_170908.pdf on 02/03/09.
15. International Council of Nurses. (2009). *Nursing Matters. Nursing: Patient Ratios.*
16. Heaven, C.M and Maguire, P. (1996). Training hospice nurses to elicit patient concerns. *Journal of Advanced Nursing*. 23, 280-286.

17. Kennedy, I. (2001). *Learning from Bristol: the Report of the Public Inquiry into children's heart surgery at the Bristol Royal Infirmary*. London: The Stationery Office.

18. Needlemann, J., Buerhaus, P., Mattke, S., Steward, M., Zelevinsky, K. (2002). Nurse-Staffing Levels and the Quality of Care in Hospitals,*N Engl J Med*. 2002; 346 (22): 1715 – 1722.

19. Nursing and Midwifery Council. (2004). *Standards of proficiency for pre-registration nursing education: Protecting the public through professional standards*. London: Nursing and Midwifery Council.

20. Nursing and Midwifery Council. (2008). *The Code: Standards of conduct, performance and ethics for nurses and midwives*. http://www.nmc-uk.org/aArticle.aspx?ArticleID=3056.

21. Roper, W., Logan, W., and Tierney, A. (1990). *The elements of nursing based on a model of living*. 3rd edition. London: Churchill Livingston.

22. Royal College of Nursing. (2003.) *Clinical Supervision in the workplace: Guidance for occupational health nurses*. London: Royal College of Nurses.

23. Royal College of Nursing. (2008).*'Dignity: at the heart of everything we do' campaign*. London: Royal College of Nurses.

24. Royal College of Nursing. (2003). *Guidance for nurse staffing in critical care*. London: Royal College of Nurses.

25. Royal College of Nursing. (2006). *Policy Guidance 15/2006: Setting Appropriate Ward Nurse Staffing Levels in NHS Acute Trusts.* London: Royal College of Nurses.

26. Rush, S., Fergy, S. and Wells, D. (1996). Professional Development. Care Planning: Knowledge for practice. *Nursing Times*. 92(38)1-4.

27. Scally, G. and Donaldson, LJ, (1998). Clinical governance and the drive for quality improvement in the new NHS in England. *British Medical Journal*. 317(7150) 4 July pp.61-65.

28. World Health Organization. (2003), *Nursing and Midwifery Workforce Management. Analysis of Country Assessments.* SEARO Technical Publication No.26. New Delhi: WHO Regional Office for Southeast Asia http://www.searo.who.int/LinkFiles/Publications_Analysis_Cntry_Asses_11Sep.pdf.

29. World Health Organization Release. (15 August 2003). http://www.who.int/mediacentre/releases/pr80/en/print.htm.

30. Parish, C. (2002). *Minimum effort: The introduction of minimum nurse-to-patient ratios can have maximum effect on recruitment and morale, in nursing standard*, Vol. 16, No 42.

31. walravenkcrysta8.typepad.com/blog/2012/06/nanda-nursing-diagnosis-list-2012-2014-complete-list-of.html

Appendices

Nursing/Midwifery Comprehensive Client Assessment Format

Please Complete or Affix Label	_____HOSPITAL
Full Name:_____ Age:_____ Sex:____ MRN: Address:- City:Sub city: Kebele: House no. - Tel. No.:_____ Source of information:_____ Source of referral: _____	Ward: _____ Bed No.: _____ Medical diagnosis:_____ Date of admission: _____ Time of admission: _____

Personal Details

Marital Status:	Nationality: Ethnic group:
	Language:
Single ☐ Widowed ☐	Religion:
Married ☐ Living common law ☐	Occupation(previous and current):
Divorced ☐	

Patient's support

1. Name:	2. Name:
Relationship:	Relationship:
Address: Tel No.: City: Sub city:	Address: Tel No.: City: Sub city:
Kebele: House no.	Kebele: House no.

1. Health perception and Management pattern

Subjective data

Client's statement about reason of admission: _____

_____

_____

Significant others' statement about reason of admission: _____

Substance use

Type	Unit /measurement	Frequency	Effect if not taken	Remark
Alcohol				
Khat				
Tobacco				
Others				

Health maintenance practice:_____

_____

Past medical history

Measures taken for the problem

Understanding of Medication(what, how and why) Patient is taking before admission (incl. "over the count"					
Drug name	Dose	Freq.	Drug name	Dose	Freq.

Known allergies for **medication: ____food:____Others: ____ **Specify**: _____

Last immunization (type and date): _____

2. Nutrition and Metabolism pattern	
Subjective data	**Objective data**
Pattern of food intake Breakfast:☐Lunch: ☐ Dinner: ☐Snacks: ☐ Others_____ Special diet _____ Appetite: Normal ☐Increased ☐Decreased ☐ Average Fluid intake per day in ml: _____ Difficulty in chewing: Yes☐ No☐ Sore tongue: Yes ☐No☐ Difficulty in swallowing: Yes☐ No☐ Nausea: Yes☐ No ☐Vomiting: Yes ☐No☐ Abdominal pain: Yes☐ No☐ Antacid: Yes☐ No☐ Wt. gain: Yes☐ No☐ Wt. losing: Yes☐ No☐ History of weight gain:Yes☐ No☐ Cold intolerance: Yes☐ No☐ Hot intolerance: Yes☐ No☐	**Wt**: _____**Ht**:_____**BMI**: _____**MUAC ___** **Skin** • Color**:**Jaundice ☐Pallor ☐Erythema ☐ Central cyanosis☐Petechiae☐Other _____ • Lesion: Macule ☐Papule ☐ Vesicle ☐Nodule☐Postule☐Wheal ☐ Ulcer ☐Creast☐ scale ☐Other_____ • Texture: Smooth and Soft ☐Rough ☐Thick ☐ • Temperature: Warm☐Extremely warm ☐ ▪ Extremely cool ☐ other____ • Moisture: Dry☐ Wet☐ Oily☐ • Turgor/skin pinch: Immediately ☐Slowly☐ Very Slow☐ • Any visible Wound: Yes☐ No☐ If yes type of wound _____ Location:_____ length in cm:___width in cm: ___ Discharge Yes☐ No☐ If yes colour: _____ Odour: _____ • Bilateral pitting edema: Yes☐ No☐ Oral cavity • Mucosa: Intact: Yes☐ No☐Pink Yes☐ No☐ Moist: Yes☐ No☐ DryYes☐ No☐ • Lesion Yes☐ No☐Others _____ • Teeth: Malformation Yes☐ No☐Denture Yes☐ No☐ Dental caries Yes☐ No☐Other _____ • Tongue: Pink☐Pale ☐ Dry☐ Moist ☐ Lesions ☐ Intact☐

3. Elimination pattern	
Subjective	**Objective**

Bowel habits

Frequency: _____Color _____

Pain: Yes ☐No☐

Consistency_____ Laxative: Yes☐ No☐

Enema: Yes☐ No☐

Hx of Bowel surgery

- Colostomy Yes☐ No☐
- Illeostomy Yes☐ No☐

Bladder habit

Frequency _____Amt____ml

Color: ____

Pain:Yes☐ No☐

Hematuria:Yes☐ No☐

Incotinenance: Yes☐ No☐

Nocturia: Yes☐ No☐

Retention: Yes☐ No☐

Urinary Catheter: Yes☐ No☐Type_____

Abdomen

Contour/shape:Rounded ☐Flat☐

Distended ☐Scaphoid ☐

Abdominal detention:Yes☐ No☐Characterize _____

Umbilicus: Protrusion☐Inflamed☐Drainage ☐

Vein: Engorged and Prominent Vein : Yes☐ No☐

Bowel sound:<5/m☐5-30/m☐>31/m☐

Abdominal Tenderness: Yes☐No☐

Characterize_____

4. Activity and exercise pattern

Subjective	Objective
Daily Activities (any difficulties with :) Hygiene: Yes☐ No☐ cooking: Yes☐ No☐ House work: Yes☐ No☐ shopping: Yes☐ No☐ Eating Yes☐ No☐ toileting Yes☐ No☐ Dyspnea: Yes☐ No☐ During Minor activity☐ During vigorous activity ☐ Chest pain:Yes☐ No☐ Stiffness: Yes☐ No☐ Weakness: Yes☐ No☐ Aching:Yes☐ No☐ Effect of illness on activity of daily living:_____ _____ _____ _____ ____ Does Pain affect your daily activity	**Musculoskeletal:** Grooming _____ Gait:Steady/Balanced ☐ Unsteady/Unbalanced ☐ Posture:_____ Extremity: swelling:Yes☐ No☐ Symmetrical: Yes☐ No☐ Range of motion : Normal for all joint☐ Decreased ☐ Crepitus: Yes☐ No☐Tone: Strong☐ Weak☐ **Respiratory** Thorax Shape: Normal ☐funnel ☐Barrel ☐pigeon☐ Symmetry: equal ☐unequal☐ Intercostal space: even and relaxed ☐ Bulging ☐Retracting☐ Tenderness: Yes☐ No☐ Breathing - Pattern: Regular ☐ Irregular☐ - Difficulty:Yes☐No☐ - Respiratory rate_____ - Depth: Normal ☐Deep ☐shallow☐ - Adventitious sound_____ **Cardiovascular** Jugular vein distension:Yes☐No☐ Heart sound: S_1:Yes☐No☐S_2:Yes☐ No☐

Objective data

Score	Level of dependence
0	Fully independent in personal care
1	Requires minimal intervention
2	Requires moderate intervention
3	Requires intensive intervention

4	Requires intensive intervention(fullydependent)	Murmurs_____ **Blood pressure** : Rt arm :_____ Lt arm :_____ **Pulse** Rate : ___ Rhythm : Regular ☐ Irregular ☐ Bilaterally equal: Yes☐No☐ **Temperature(**in ^{0}C): Axilary___Oral_____Rectal___ **Pain Score : (0-10)** ____

5. Rest and sleep pattern	
Subjective	**Objective**
Sleep time_____ Adequacy: Yes☐ No☐ Difficulty falling sleep: Yes☐ No☐ Sleep aid: Yes☐ No☐ Sleep medications: Yes☐ No☐ Change in sleeping pattern: Yes☐ No☐ Difficulty remaining sleep**:** Yes☐ No☐ What facilitate sleep_____ What hinders sleep _____	Yawning: Yes☐ No☐ Short attention span: : Yes☐ No☐ Irritability**:** Yes☐ No☐

6. Sexuality and reproductive pattern	
Subjective	**Objective**
Female Menstruation Date began: _____Lastcycle_____Length_____ Gravida: ____ Para____ Abortion___ still birth_____ Current Pregnancy:Yes☐ No☐ LNMP:_____EDD--------GA--------- Fertility: Fertile☐infertile☐ Male/Female Contraception: Yes☐ No☐ Undesirable side effects of contraceptives :_____ Problem with Sexual activities:_____ _____ Effect of illness on Sexual activities:_____ _____ STD/STI: _____ Pain during intercourse: Yes☐ No☐ Burning during intercourse: Yes☐ No☐ Discomfort during intercourse: Yes☐ No☐	Breast: Shape_____Symmetry_____ Nipple: Erected☐ Flat☐Inverted☐ Discharge:Yes☐ No☐ Masses: Present ☐ No mass ☐ Lymph node: Enlarged: Yes☐ No☐ Tenderness: Yes☐ No☐ Testicular exam Masses:Yes☐ No☐ Swelling:Yes☐ No☐ Penile exam Mass: Yes☐ No☐Growth: Yes☐ No☐ Lesion:_____ Discharge: Yes☐ No☐ Female Genetalia Swelling:Yes☐ No☐ Symmetry: symmetrical ☐asymmetrical ☐ Discharge: Yes☐ No☐ Characterize _____ Vaginal opening: Lesion _____ Discharge_____ Inflammation: Yes☐ No☐

7. Cognitive and perceptual

Subjective	Objective
Educational status:_____ Able to read _____Write _____ Primary language:_____ Visual problemYes☐ No☐ explain _____ Aids for vision: Yes☐ No☐ Hearing problemYes☐ No☐ explain _____ Aid for hearing:Yes☐ No☐ Taste problem Yes☐ No☐ explain _____ Smelling problemYes☐ No☐ explain _____ Problem in sensation(skin)Yes☐ No☐ explain _____ Pain(any):Yes☐ No☐ Characterize if yes _____ Ability to recall: Remote: Yes☐ No☐Recent: Yes☐ No☐ Ability to make decisions:Yes☐ No☐ Expression of feelings**:** _____	• Ability to speak Yes☐ No☐ • Ability articulate words Yes☐ No☐ • Level of consciousness : **Glasgow coma scale** : _____ • Orientation to TPP:_____ • Hearing : Tympanic Membrane: Intact☐ Ruptured☐ whisper test: respond ☐unable to respond☐ • Visual acuity: OD_____OS:_____OU:_____ • PERRLA: intact Bilaterally ☐Non intact☐ • Skin : Sensations: Superficial: +Ve☐ –V ☐ o Deep Pressure: +Ve☐ –V ☐ o 2Point discrimination: +Ve☐ –V ☐

8. Self-Perception and Self-concept pattern

Subjective	Objective
What do you feel differently about yourself? _____ Perception of abilities:_____ Things frequently make you angry ,fearful or anxious :_____ _____	Appearance(dressing and Hygiene):_____ _____ Mood(expression): Nervous ____ relaxed ____ _____ Speech: Pace of conversation: Appropriate☐ inappropriate☐ Tone of voice: Appropriate to the situations☐ Inappropriate to situations☐

9. Coping and stress tolerance pattern

Subjective	
Any big change that can Cause Stressor:_____ _____ Coping methods: _____ _____ Support system**:** _____	

10. Role and relationship

Discharge Arrangements and Other Social Details

Subjective	Objective
Role in family:_____ Responsibility: _____ Work role:_____ Social role:_____ Level of satisfaction:_____ Effect of illness on roles**:**_____ Lives alone? Employee? Self employee? Ability to pay: ☐ Yes☐No Comments:_____	**Communication between family members:___** _____ _____ **Family visits:** Yes☐ No☐ ☐ Yes No ☐ Comments: _____ ☐ YesNo ☐ Comments: _____ ☐ Yes No ☐ Comments: _____

11. Value and belief

Subjective	
• Cultural practice :Yes ☐ No☐ • Religious practice Yes☐ No ☐ • Familial traditions (yes ☐No☐) • Would you like your religious leader to be contacted? Yes☐ No ☐	

Summary of subjective and objective data	
Summary subjective data	**Summary objective data**

Signature of admitting nurse**: _____** Signature of the client: _____

Date:_____ **Date :_____**

Full name_____________________________________

Age __Sex____

MRN: Tel. No.: Ward: Bed No.:

Problem no	**Diagnoses/ problemes**	Date identified	Signature and designation	Date resolved	Signature and designation

Care plan

Full name___________________________________

Age __Sex____

MRN: Tel. No.: Ward: Bed No.:

Date and Time	Problem No	**Goals**	**Expected outcomes**	**Interventions**	Signature

Full name___________________________________

Age __Sex____

MRN: Tel. No.: Ward: Bed No.:

Date Identified and Time	Problem No	**Implementations**	Signature and Designation

progress note

Progress reportNo. ___ Shift: Morning ☐ Afternoon☐ Night ☐Date_____ Time___
Signiture_____
Subjective: _____
_____

Objective: _____
_____
_____
Analysis/ Assessment: _____
Plan: _____
_____
_____
Progress report No. ___: Shift: Morning ☐ Afternoon☐ Night ☐Date_____ Time____
Signiture_____
Subjective:_____
_____

Objective: _____
_____
_____
Analysis/ Assessment: _____
Plan: _____
_____
_____
Progress reportNo. ___:Shift: Morning ☐ Afternoon☐ Night ☐Date_____ Time___
Signiture_____
Subjective:_____
_____

Objective: _____
_____
Analysis/ Assessment: _____
Plan: _____
_____

Care plan

Full name_____

Age __Sex____

MRN: Tel. No.: Ward: Bed No.:

Date and Time	Pb.No	**Goals**	**Expected outcomes**	**Interventions**	Signature

Full name______________________________________

Age __Sex____

MRN: Tel. No.: Ward: Bed No.:

Date Identified and Time	Pb.No	**Implementations**	Name and Signature and Designation

Progress note

Progress report no. ____ Shift: Morning ☐ Afternoon☐ Night ☐Date_____ Time___

name and **Signature**_____

Subjective:

_____

_____

_____

Objective:

_____

_____

_____

_____

_____

_____

Analysis/ Assessment:

_____

Plan:

_____

_____

_____

_____

_____

_____

Progress report no. ____: Shift: Morning ☐ Afternoon☐ Night ☐Date_____ Time____ name and **Signature**_____

Subjective:_____

_____

_____

Objective:

_____

_____

_____

_____

_____

_____

Analysis/ Assessment:

_____

Plan:

_____

_____

_____

_____

_____

Progress report no. ____: Shift: Morning ☐ Afternoon☐ Night ☐Date_____ Time___ name and **Signature**_____

Subjective:_____

_____

_____

Objective:

_____

_____

Analysis/ Assessment:

_____

Plan:

_____

_____

_____

_____

Appendix B:-NANDA List

Nursing? Diagnoses

Below is the list of the 16 New? **NANDA Nursing Diagnosis List for 2012-2014**

1. Risk for Ineffective Activity Planning
2. Risk for Adverse Reaction to Iodinated Contrast Media
3. Risk for Allergy Response
4. Insufficient Breast Milk
5. Ineffective Childbearing Process
6. Risk for Ineffective Child Bearing Process
7. Risk for Dry Eye
8. Deficient Community Health
9. Ineffective Impulse Control
10. Risk for Neonatal Jaundice
11. Risk for Disturbed Personal Identity
12. Ineffective Relationship
13. Risk for Ineffective Relationship
14. Risk for Chronic Low Self-Esteem
15. Risk for Thermal Injury
16. Risk for Ineffective Peripheral Tissue Perfusion

Nursing Diagnoses: Definitions and Classification 2012-14 (Nanda International)

Domain 1 Health Promotion

- Deficient diversional activity
- Sedentary lifestyle
- Deficient community health
- Risk-prone health behavior
- Ineffective health maintenance
- Readiness for enhanced immunization status
- Ineffective protection
- Ineffective self-health management
- Readiness for enhanced self-health management
- Ineffective family therapeutic regime management

Domain 2 Nutrition

- Insufficient breast milk
- Ineffective infant feeding pattern
- Imbalanced nutrition: less than body requirements
- Imbalanced nutrition: more than body requirements
- Risk for imbalanced nutrition: more than body requirements
- Readiness for enhanced nutrition

- Impaired swallowing
- Risk for unstable blood glucose level
- Neonatal jaundice
- Risk for neonatal jaundice
- Risk for impaired liver function
- Risk for electrolyte imbalance
- Readiness for enhanced fluid balance
- Deficient fluid volume
- Excess fluid volume
- Risk for deficient fluid volume
- Risk for imbalanced fluid volume

Domain 3 Elimination and Exchange

- Functional urinary incontinence
- Overflow urinary incontinence
- Reflex urinary incontinence
- Stress urinary incontinence
- Urge urinary incontinence
- Risk for urge urinary incontinence
- Impaired urinary elimination
- Readiness for enhanced urinary elimination
- Urinary retention
- Constipation
- Perceived constipation
- Risk for constipation
- Diarrhea
- Dysfunctional gastrointestinal motility
- Risk for dysfunctional gastrointestinal motility
- Bowel incontinence
- Impaired gas exchange

Domain 4 Activity/ Rest

- Insomnia
- Sleep deprivation
- Readiness for enhanced sleep
- Disturbed sleep pattern
- Risk for disuse syndrome
- Impaired bed mobility
- Impaired physical mobility
- Impaired wheelchair mobility
- Impaired transfer ability

- Impaired walking
- Disturbed energy field
- Fatigue
- Wandering
- Activity intolerance
- Risk for activity intolerance
- Ineffective breathing pattern
- Decreased cardiac output
- Risk for ineffective gastrointestinal perfusion
- Risk for ineffective renal perfusion
- Impaired spontaneous ventilation
- Ineffective peripheral tissue perfusion
- Risk for decreased cardiac tissue perfusion
- Risk for ineffective cerebral tissue perfusion
- Risk for ineffective peripheral tissue perfusion
- Dysfunctional ventilator weaning response
- Impaired home maintenance
- Readiness for enhanced self-care
- Bathing self-care deficit
- Dressing self-care deficit
- Feeding self-care deficit
- Toileting self-care deficit
- Self-neglect

Domain 5 Perception/ Cognition

- Unilateral neglect
- Impaired environmental interpretation syndrome
- Acute confusion
- Chronic confusion
- Risk for acute confusion
- Ineffective impulse control
- Deficient knowledge
- Readiness for enhanced knowledge
- Impaired memory
- Readiness for enhanced communication
- Impaired verbal communication

Domain 6 Self-Perception

- Hopelessness
- Risk for compromised human dignity
- Risk for loneliness

- Disturbed personal identity
- Risk for disturbed personal identity
- Readiness for enhanced self-control
- Chronic low self-esteem
- Risk for chronic low self-esteem
- Risk for situational low self-esteem
- Situational low self-esteem
- Disturbed body image
- Stress overload
- Risk for disorganized infant behavior
- Autonomic dysreflexia
- Risk for autonomic dysreflexia
- Disorganized infant behavior
- Readiness for enhanced organized infant behavior
- Decreased intracranial adaptive capacity

Domain 7 Role Relationships

- Ineffective breastfeeding
- Interrupted breastfeeding
- Readiness for enhanced breastfeeding
- Caregiver role strain
- Risk for caregiver role strain
- Impaired parenting
- Readiness for enhanced parenting
- Risk for impaired parenting
- Risk for impaired attachment
- Dysfunctional family processes
- Interrupted family processes
- Readiness for enhanced family processes
- Ineffective relationship
- Readiness for enhanced relationship
- Risk for ineffective relationship
- Parental role conflict
- Ineffective role performance
- Impaired social interaction

Domain 8 Sexuality

- Sexual dysfunction
- Ineffective sexuality pattern
- Ineffective childbearing process
- Readiness for enhanced childbearing process

- Risk for ineffective childbearing process
- Risk for disturbed maternal-fetal dyad

Domain 9 Coping/ Stress Tolerance

- Post-trauma syndrome
- Risk for post-trauma syndrome
- Rape-trauma syndrome
- Relocation stress syndrome
- Risk for relocation stress syndrome
- Ineffective activity planning
- Risk for ineffective activity planning
- Anxiety
- Compromised family coping
- Defensive coping
- Disabled family coping
- Ineffective coping
- Ineffective community coping
- Readiness for enhanced coping
- Readiness for enhanced family coping
- Death anxiety
- Ineffective denial
- Adult failure to thrive
- Fear
- Grieving
- Complicated grieving
- Risk for complicated grieving
- Readiness for enhanced power
- Powerlessness
- Risk for powerlessness
- Impaired individual resilience
- Readiness for enhanced resilience
- Risk for compromised resilience
- Chronic sorrow
- Stress overload
- Risk for disorganized infant behavior
- Autonomic dysreflexia
- Risk for autonomic dysreflexia
- Disorganized infant behavior
- Readiness for enhanced organized infant behavior
- Decreased intracranial adaptive capacity

Domain 10 Life Principles

- Readiness for enhanced hope
- Readiness for enhanced spiritual well-being
- Readiness for enhanced decision-making
- Decisional conflict
- Moral distress
- Noncompliance
- Impaired religiosity
- Readiness for enhanced religiosity
- Risk for impaired religiosity
- Spiritual distress
- Risk for spiritual distress

Domain 11 Safety/ Protection

- Risk for infection
- Ineffective airway clearance
- Risk for aspiration
- Risk for bleeding
- Impaired dentition
- Risk for dry eye
- Risk for falls
- Risk for injury
- Impaired oral mucous membrane
- Risk for perioperative positioning injury
- Risk for peripheral neurovascular dysfunction
- Risk for shock
- Impaired skin integrity
- Risk for impaired skin integrity
- Risk for sudden infant death syndrome
- Risk for suffocation
- Delayed surgical recovery
- Risk for thermal injury
- Impaired tissue integrity
- Risk for trauma
- Risk for vascular trauma
- Risk for other-directed violence
- Risk for self-directed violence
- Self-mutilation
- Risk for self-mutilation
- Risk for suicide
- Contamination
- Risk for contamination
- Risk for poisoning

- Risk for adverse reaction to iodinated contrast media
- Risk for allergy response
- Latex allergy response
- Risk for latex allergy response
- Risk for imbalanced body temperature
- Hyperthermia
- Hypothermia
- Ineffective thermoregulation

Domain 12 Comfort

- Impaired comfort, Readiness for enhanced comfort, Nausea, Acute pain, Chronic pain, Impaired comfort, Readiness for enhanced comfort and Social isolation

Appendix: Pain Assessment

Assessment of Pain

Pain should be considered as the **5th vital sign**. A proper assessment of pain is essential for successful management. Patients often have more than one type of pain.

Important consideration in pain assessment

- Pain is subjective and two patients may report severity differently from each other
- Despite the fact that pain is specific to each person, patients can usually accurately and reproducibly indicate the severity of their symptom by using a scale
- Scales enhance the ability of patients to communicate the severity of their pain to health care professionals and the ability of clinicians to communicate among themselves
- Scales also allow the clinician to assess the effect of medications

Suggested tools for Pain Measurement in Adults

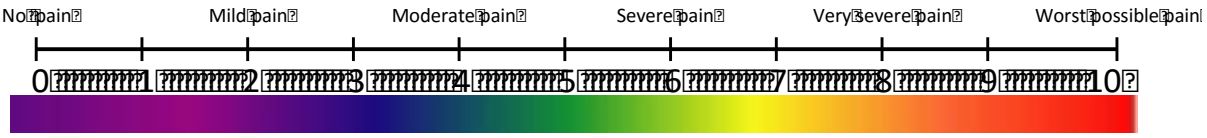
1. **Numeric Pain Rating Scale**

The health worker asks the patient to rate their pain intensity on a numerical scale that ranges from 0 (indicating 'no pain') to 10 (indicating the 'worst possible pain').

Procedures

a) Explain to the patient about what you are going to do (eg. 'I want to assess your pain level to help us properly manage the pain'
b) Ask the patient 'please rate your pain in a scale from zero to 10 (0 = no pain and 10 = worst Possible pain). You can use a scale like below

Numeric Pain Rating Scale



c) Record the patient scored pain level on the necessary form to make treatment decisions, follow-up, and compare between examinations

2. The hand scale

The hand scale ranges from a clenched hand (which represents 'no hurt') to five extended digits (which represents 'hurts worst'), with each extended digit indicating increasing levels of pain.

Note: it is important to explain this to the patient as a closed fist could be interpreted as worst possible pain in some cultures

a) Explain to the patient about what you are going to do (eg. 'I want to assess your pain level that will help us properly manage your pain'
b) Show your hands to the patient and ask 'please rate your pain level. You should show your hands like below or use the drawing use a scale

c) Multiply the result by two to score the pain to 0 to 10 and record on the necessary forms (if the patient reports hurts whole lot mean four figures the result will be recorded as 4*2= 8 on the routine observation form).

Pain Measurement in Children

There are three ways to assess pain in children

- Ask the child
- Ask the parent or caregiver ;Ask about previous exposure to pain, verbal pain indicators, usual behavior or temperament
- Observe the child: FLACC scale

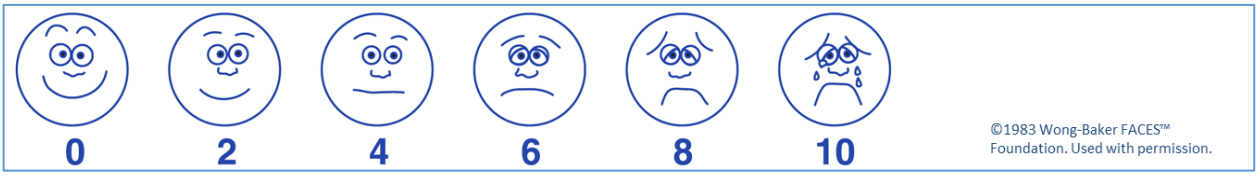
Note* the child is the best person to report their pain

Suggested tools for Pain Measurement in children

1. **Faces scale**

***Use in children who can talk (usually 3 years and older)**

a. Show the Child the Following picture and explain to the child that each face is for a person who feels happy because he has no pain, or a little sad because he has a little pain, or very sad because he has a lot of pain



b. Ask the child to pick one face that best describes his or her current pain intensity
c. Multiply number of the pain level that the child reports by two and record on the necessary form to make treatment decisions, follow-up, and compare between examinations

2. FLACC Scale

- Use in children less than 3 years of age or older children who can't talk
- Use it like an APGAR (Appearance, Pulse, Grimace, Activity, Respiration) score, arriving at a score out of 10

Procedure

a. Observe the child carefully and give points based on the following table

FLACC Scale

	SCORING		
CATEGORIES	**0**	**1**	**2**
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting, back and forth, tense	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractible	Difficult to console or comfort

Each of the five categories: (**F**) Face; (**L**) Legs; (**A**) Activity; (**C**) Cry; (**C**) Consolability, is scored from 0–2 which results in a total score between 0 and 10 (*Merkel et al. 1997*)

d. Record the summation of observation on the necessary form to make treatment decisions, follow-up, and compare between examinations

Pain in the Elderly

- Chronic pain is common among the elderly
- Dementia and problems communicating often make assessment of pain challenging
- Compliance with medications can also be a challenge
    - `Impaired vision
    - Limited mobility
    - Memory problems

Many patients who appear cognitively impaired may still be able to provide useful information concerning pain

- Interview caregivers: patterns of particular behaviors may have developed that indicate pain (e.g. placing a hand on the forehead for a headache)
- Review medical record for known pain-inducing pathology
- Observe facial expression, body posture, vocalizations, appetite, interactivity

Utilize Pain Assessment in Advanced Dementia (PAINAD)

Pain Assessment in Advanced Dementia (PAINAD) Scale

a. Observe the patient carefully and give points based on the following table

Items	**0**	**1**	**2**
Breathing independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation	Noisy labored breathing. Long periods of hyperventilation. Cheyne-Stokes respiration
Negative vocalization	None	Occasional moan or groan. Low level speech with a negative or disapproving quality	Repeated troubled calling out. Loud moaning or groaning. Crying
Facial expression	Smiling or inexpressive	Sad. Frightened. Frown	Facial grimacing (an ugly or disapproving facial expression)
Body language	Relaxed	Tense. Distressed pacing. Fidgeting	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out
Consolability	No need to console	Distracted or reassured by voice or touch	Unable to console, distract, or reassure

b. Record the sum on the necessary form to make treatment decisions, follow-up, and compare between examinations

8

Maternal, Neonatal and Child Health Services

Table of Contents

Abbreviations

ANC	Ante Natal Care
AIDS	Ante Immunodeficiency Virus
ART	Ante Retro Viral Treatment
ARV	Ante Retro Viral
BCG	Bacillus Calmette Gverin
BP	Blood Pressure
B.GP	Blood Group

CAC Comprehensive abortion care

CASH Clean and Safe Health facility

CEmONC Comprehensive Emergency maternal Obstetric and Neonatal Care

COI Continuous Quality Improvement

CPAP Continuous Positive Airway Pressure

C/S Caesarean Section

DBS Dried Blood Spots

EBM Exclusive Breast Milk

EPI Expanded Program of Immunization

ER Emergency Room

ETAT Emergency Triage and Treatment

FANC Focused Ante Natal Care

FHR Fetal Heart Rate

FMOH Federal Ministry of Health

FP Family Planning

HAART Highly Active Anti Retro Viral Treatment

HBB Helping Baby Breath

HBV Hepatitis B Virus

Hgb Hemoglobin

HDU High Dependency Unit

HMD Hyaline Membrane Disease

ICU Intensive Care Unit

IESO Integrate Emergency Surgical Officer

IMNCI Integrated Management of Neonatal and Child Health Illness

IO Intra Osseous

IV Intra venous

ISO Integrated Surgical Officer

KMC Kangaroo Mother Care

L &DLabour and Delivery

NGT Naso Gastric Tube

LBW Low Birth Weight

LFSOL Latent First Stage of Labour

LP Lumbar Puncture

MAS Meconium Aspiration Syndrome

MNCH Maternal, Neonatal and Child Health

MCH Maternal and Child Health

NB New Born

NICU Neonatal Intensive Care Unit

OI Opportunistic Infection

OPD Out Patient Department

OPV Oral Polio Vaccine

QI Quality Improvement

OR Operation Room

PITC Provider Initiative Testing and Counseling

PPH Post-Partum Hemorrhage

PR Pulse Rate

RH Rhesus factor

ROM Rupture of Membrane

SAM Sever Acute Malnourishment

SCF Stem Cell Factor

SGA Small for Gestational Age

SMT Senior Management Team

SOP Standard of Procedure

STI Sexually Transmitted Infection

TB Tuberculosis Bacilli

TT Tetanus Toxoid

VDRL Venereal Disease Research Laboratory

HIV Human Immunodeficiency Virus

UNICEF United Nation International Children's Emergency Fund

U/A Urinalysis

U/S Ultra Sound

WHO World Health Organization

Appendices

Figures

Section 1 Introduction

The time of childbirth and the period immediately after birth are particularly critical for maternal, fetal and neonatal survival and well-being. Effective care to prevent and manage complications during this critical period is likely to have a significant impact on reducing maternal deaths, stillbirths and early neonatal deaths. Within this critical period and during antenatal care, quality of care improvement efforts would target essential maternal and newborn care and additional care for management of complications that could achieve the highest impact on maternal, fetal and newborn survival and well-being.

Additional to maternal and neonatal mortality burden, the high perinatal and under five mortalities require attention and need to be addressed. Hospitals need to implement the operational standards contained in this chapter and use the revised standard guidelines, including the establishment and maintenance of newborn corners in maternity wards. Hospitals should also have aseparate triage setting for pediatricand emergency care, running separate pediatric wards and OPDs, establishing a well-equipped neonatal unit, assigning adequate number of qualified health workers in each pediatric unit with training on revised national guidelines and setting functional vaccination/EPI clinic as essential components of quality pediatric care that address the challenges of high perinatal and U5 mortality rates.

The purpose of the *Standards for Maternal, Neonatal and child Care* is to assist program managers and health care providers of a hospital to:

- Introduce standards setting and a quality improvement process at facility level as a means to improve access and quality of maternal, neonatal and child health services;
- Provide effective maternal, neonatal and child health services;
- Use existing resources to achieve the optimal health care outcomes; and improve individuals', families' and community's satisfaction and utilization of maternal, neonatal and child health services.

Section 2 Operational standards for MNCH care

1. The hospital ANC unit provides individualized, client centered and evidence based care to clients on all working days and high risk mothers should be seen in the referral clinic.

2. The hospital should ensure provision of Comprehensive Emergency Maternal and Newborn Care (CEmONC) services
3. The hospital should ensure women and child friendly services at all MNCH units including pain management.
4. The hospital ensures all equipment, essential drugs, supplies and reference materials are available in maternity and pediatric units
5. The hospital should ensure the provision of intra-partal care as per national protocols
6. The hospital should provide comprehensive postnatal care in the facility as per national standards
7. The hospital should ensure provision of family planning (with focus on long term methods) and comprehensive abortion care services following the national guideline and policies.
8. Maternity and pediatric units should undertake CQI activities by conducting regular review meetings and audit programmes.
9. Hospitals have established separate pediatric OPD, emergency and triage services.
10. Hospitals have comprehensive Neonatal Care service that includes NICU, KMC, mother's room and isolation rooms.
11. Hospitals have separate Pediatric Wards composed of separate critical, general, SAM, isolation and procedure rooms.
12. Midwives should implement the midwifery process at all hospitals for all admitted patients.

Section 3 Implementation Guidance

3.1 Maternity care Implementation guideline

3.1.1 Roles and Responsibilities

The maternity unit will be led by obstetrician and gynecologist or IESO, and she/he will have the following responsibilities:

- The maternity head monitors all the activities of the maternity unit
- Leads the maternity QI subcommittee to conduct regular audit meeting and draw action plan depending on the finding.
- She/he communicates with the hospital SMT, arrange trainings for all staffs, make sure that there is proper hand over mechanisms, and proper follow up of day to day clinical activity.
- He/she should make sure that at least 5% of vaginal deliveries should be attended either by obstetrician or IESO.

The heads of the maternity units (ANC, delivery ward and postnatal ward) will have roles and responsibilities in each respective unit. They prepare and compile monthly, quarterly and yearly report and action plan. They should be members of maternal death audit committee/QI committee and prepare schedule for the unit and make sure that all the necessary materials and supplies are always available. They communicate with the obstetrician/IESO whenever they have any challenges in their respective units.

3.1.2 Rules and norms

The maternity unit includes the ANC unit, labor and delivery ward, and postnatal ward. The unit should be placed in an easily accessible location and mothers should be treated with respect and dignity. Respectful maternity and newborn care norms should be applied to all clients and pain should be managed appropriately.

The maternity unit should do audits regularly. Maternity unit audits should be performed every month and client/mom's satisfaction survey should be performed every 3 months. Data should be displayed on white board at ANC, labor and delivery and postnatal ward and updated.

Regular review meetings should be held at least every week to discuss audit findings, ongoing challenges, weekly ward activity and other findings.

Community involvement in the form of pregnant forum or community forum should be held at least every 3 months.

Midwives should implement the midwifery process at all hospitals for all admitted patients. All midwives should assess, diagnose, plan, implement and evaluate their admitted patient according midwifery care practice. (Refer a book, Standard of Midwifery Care Practice in Ethiopia)

3.1.3 ANC

Hospital should provide ANC service open throughout working days by skilled professionals. A midwife will be the head of the ANC unit and all the service providers should be trained on FANC. The ANC room keeps privacy by using curtains / screen and all ANC services including U/S will be provided free of charge. The ANC clinic provides evidence based care to clients.

HIV positive pregnant mothers and their exposed infants should be provided option B+, and both should be followed in the clinic until 18 months and beyond and DBS should be done in the clinic. Invitation paper will be given for partners of pregnant women to increase partner involvement. The ANC unit should have a referral clinic for high risk mothers run by obstetrician or IESO. The referral clinic should be open at least two days per week and at least 25% of ANC mothers should be seen in the referral clinic.

Investigation results should be ready on the same day. Iron folate supplementation will be done at least for three months (90tabs) and deworming after first trimester; drugs should be available and provided on site free of charge. All mothers who come for ANC should be counseled on birth preparedness and complication readiness, immunization, breast feeding, infant feeding, family planning, HIV, and nutrition. Mothers are better allowed to hold their ANC follow up card after 36 weeks.

3.1.4 Labor and delivery

Laboring mothers go directly to labor ward without any administrative procedures. There should be triage/reception with clear admission criteria. There should be a log book at triaging site or reception for laboring mothers who are in false or latent phase of labor. Rapid assessment tool and client flow in labor and delivery posted at reception and emergency triage.

Figure 1: Rapid assessment of laboring mothers to advance care

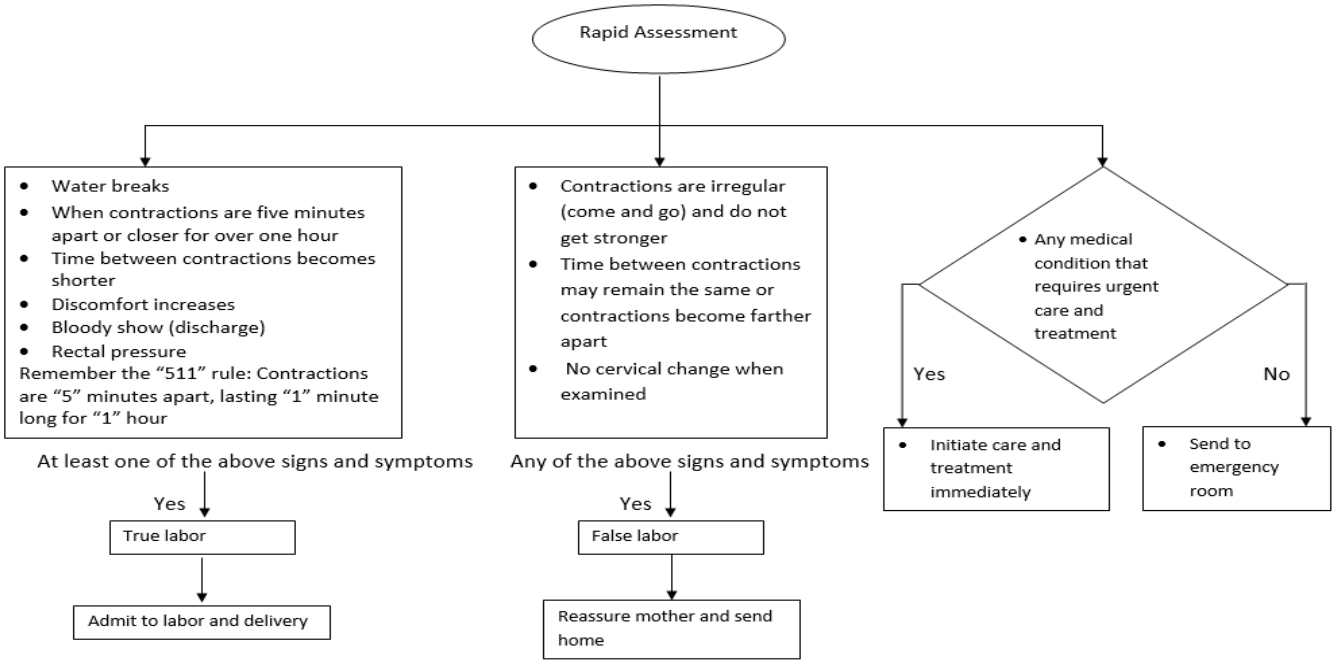
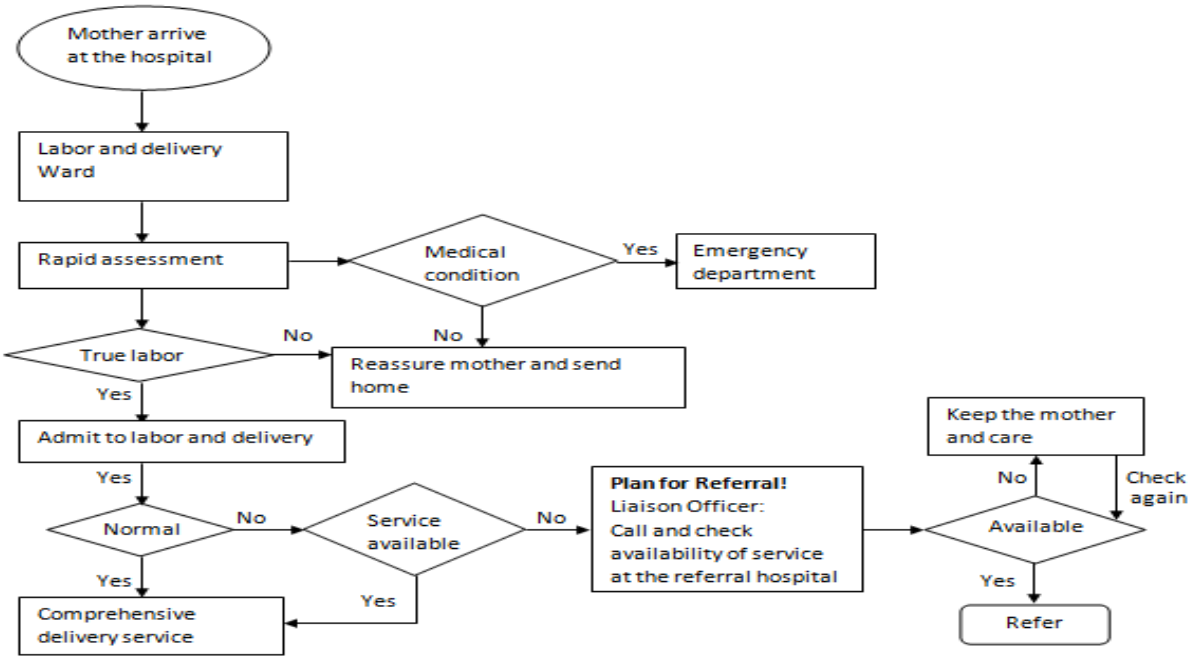


Figure 2: Flow chart for triage and registration of laboring mothers



The labor ward rooms are clean, well ventilated and with good temperature (neither hot nor cold). Labor ward needs to have emergency drug cabinet that has labeled essential drugs. The labor ward should have functional refrigerator with temperature monitoring chart. It should have all essential functional medical equipment. The ward should have functional clock, weighing scale, head lamp and tape meter.

Privacy must be maintained for first and second stage of labor by screens or curtains and sufficient space should be available for laboring mothers and one companion. Mothers are allowed oral fluids and light food during labor. Family member/support person should be allowed to remain with woman constantly during labor and delivery. There should be functional bathroom and toilets with hand washing basin and soap accessible to laboring mothers. The labor ward has running water and soap for hand washing for the staff.

The labor and delivery ward should have at least four beds for first stage of labor and two delivery coaches for second stage of labor. The maternity unit needs to have an ICU or HDU available near the nursing station for seriously ill patients.

Partograph should be consistently used and third stage should be managed actively. Date and time of admission, identification and previous obstetric history, admission findings of BP, PR, Temperature, lie and presentation, FHB, uterine contraction, cervical status (dilatation and effacement), membrane status (intact or ruptured), molding and station should be documented.

The Partograph has to be used correctly and consistently. If an intervention has to be made, it should be from the Partograph findings and the action has to be appropriate and timely.

All intervention including instrumental delivery and C/S should be based on justified indications and performed timely. Pertinent findings and decision notes should be entered in to the medication record.

HGB, blood GP and RH, VDRL for syphilis and HIV testing should be done for all and FHB and uterine contraction monitored every 30 minutes; cervical dilatation assessed every four hours. and/or on indications (signs of 2nd stage or membrane ruptured). Maternal BP measured every four hours for mothers with no pre-eclampsia or eclampsia and pulse rate every half an hour.

Safe child birth check list should be used for all laboring mothers. Delivery coach is comfortable with all accessories and mothers are allowed to deliver in their preferred position. Third stage should be managed actively. Well-equipped newborn corner for routine essential newborn care and neonatal resuscitation should be available in the labor ward; Clamp cord after 1-3 minutes (unless the neonate is asphyxiated and needs to be moved immediately for resuscitation), cut the cord with sterile instrument, put sterile tie, and put identity label on the baby(the identity label should contain mother's name, card number, gender of the baby and time of delivery).The newborn corner facility should include radiant warmer, new born sized ambu bag of sizes 0 and 1, and suction bulb and/or suction machine. All midwives should be trained on Helping Babies Breath and NICU should be available for advanced care. Ideally NICU should be adjacent to labor ward. Delivery summary should be filled completely on form at the back of Partograph.

3.1.5 Postnatal ward

The post-natal ward should be clean, ventilated, appropriately illuminated, has good temperature, well equipped and adjacent to the labor ward. The post-natal beds should be clean and comfortable with accessories and bed sheet. The hospital should give comprehensive post-natal care for at least 24hours and maternal BP, PR, temperature, uterine tone (contraction), vaginal bleeding checked every 15min for the first 2hours. Neonates are checked for breathing problems, color; pulse rate, breast feeding and cord tie security. Mother should be counseled for danger signs for both mother (vaginal bleeding, fever, foul smelling vaginal discharge, severe abdominal pain, safe sex, abnormal body movement) and neonate (failure to suck, jaundice, cyanosis, fever, abnormal body movement, difficulty of breathing).

3.1.6 Cesarean section

The hospital needs to have a fully functional operating theatre (one table dedicated for cesarean section) and it should be adjacent to the labor and delivery ward. Appropriate and adequate cesarean section team members should be available 24/7 (OBY/GYN or IESO, anesthetist, scrub nurses) with all essential drugs for cesarean section and functional essential equipment. Safe surgery check list should be used for all surgeries and documentation should be complete for all cesarean sections. Audit to assess completeness of documentation (Indication and evidences for C-section, time of decision and incision, operation note with the outcome and name with signature of the Surgeon, condition of the mother and the baby, etc with legible hand writing) should be done every three month and rate and indications for C/S should be displayed in white board every month. Spinal anesthesia used in the absence of contraindication

3.1.7 Maternity waiting homes

Maternity waiting homes are residential facilities where mothers who live remotely can wait before giving birth at a health facility. The admission criteria for mothers to the maternity waiting homes is any mother who resided from distant areas (distance from the health facility more than 10 kms), who is pregnant for eight months or more, irrespective of her gravidity, parity, medical and obstetrical history is eligible. The services provided in maternity home include ANC follow up for normal and high risk mothers, providing appropriate treatment for mothers who are sick and health education about ANC, skilled birth attendance, post-natal, F/P, danger signs, etc. The room should be illuminated, ventilated, clean and should accommodate at least six mothers in one room. In addition it should have cooking area (kitchen) with full equipment. Furthermore, the room should have bath room, toilet and sink for hand washing.

3.1.8 Case management

Efforts to reduce maternal mortality should focus on reducing the likelihood that a woman will have a high risk pregnancy; reducing the likelihood that a pregnant woman will experience a serious complication of pregnancy or childbirth and improving the outcomes for women with complications.

The clinical causes of most maternal deaths in Ethiopia are hemorrhage, anemia, eclampsia, obstructed labor and unsafe abortion. All of these complications are preventable. Therefore each hospital should be able to deal with these pressing challenges to significantly reduce maternal mortality and morbidity by treating a mother according to Management Protocol on Selected Obstetrics Topics (FMOH, January, 2010)

3.1.9 FP services

It is basic right of individual and family to be provided with service, supplies and information how to plan their families. Family planning clients shall receive information, education and counseling on sexual and reproductive health, family planning and STI/HIV/AIDS.

The hospital should have open access to and availability of full range of family planning services as integral part of basic health services with particular emphasis on long term methods. Services provided should be patient focused, ensuring good communication and client counseling.

All working staffs should have received appropriate training, demonstrate competent skills and the services should be evidence based including use of national guideline and policies.

The hospital should ensure availability of all contraceptive methods with particular emphasis on long term methods and the service shall be available at all working hours.

3.1.9 Comprehensive abortioncare (CAC) service

Woman-centered abortion care is a comprehensive approach to providing abortion care services that takes into account the various factors that influence a woman's individual needs— both physical and mental—as well as her ability to access services and her personal circumstances. Providing comprehensive abortion care includes a range of services that support women in exercising their sexual and reproductive rights.

The hospital should ensure that the abortion care services provided to women, as permitted by law, are safe, affordable and accessible to

- Reduce morbidity and mortality due to unsafe abortion
- Reduce deaths and disability from abortion complications through effective management and/or stabilization and referral
- Improve women's broader reproductive health by integrating abortion care services into other sexual and reproductive health services
- Help women make free and informed decisions regarding their pregnancy, be more informed about health services and follow up care needed, and feel more emotionally comfortable with their decisions through supportive, non-directive reproductive health counseling
- Prevent unwanted pregnancies through contraceptive services, including counseling and method provision

All working staffs should have received appropriate training, demonstrate competent skills and the services should be evidence based including use of national guideline and policies.

The hospital should also ensure availability of safe abortion services including medical and surgical options as permitted by the law.

3.2 Child health Implementation Guidance

3.2.1 Pediatric Emergency, Triage and Ambulatory (OPD) Services

Hospitals have established pediatric Emergency and Triage Unit within Pediatric OPD premises.

Rapid triage for all children presenting to hospital needs to be put in place to identify and manage children with emergency or priority signs. Once emergency signs are identified, prompt emergency treatment needs to be given (in the emergency room that is located next to the triage area) to stabilize the condition of the child.

Emergency triage area for pediatric cases should be set within pediatric OPD premises for triaging all children upon their arrival in a hospital. Children should be triaged immediately (before any registration or other process) and categorized as emergency, priority and non-urgent cases so that to provide immediate emergency treatment to those with emergency signs, to bring to the front of the OPD queue those with priority signs and to identify non-urgent cases that can wait for their turn at the regular pediatric OPD. Appropriate identification codes such as color coding should be used to categorize triaged children.

Emergency treatment room with necessary equipment and emergency drugs should be prepared adjacent to the triage area where children with emergency signs are given emergency treatment such as oxygen administration for children with severe respiratory distress, anticonvulsant treatment for those children who are convulsing etc. Professionals with training in ETAT should be assigned in the emergency and triage unit (see annex for the list of equipment and supplies)

Pediatric emergency room layout and physical structure

- The emergency room should be located next to the triage area within pediatric OPD premises
- Triage area should have adequate space, ventilation and illumination
- Cleanliness of the triage and emergency area should follow CASH guidelines.

Emergency room drugs, equipment, supplies and staff competencies

- The emergency room should have emergency box containing the drugs and equipment listed in Annex 1.
- Emergency box should be accessible by the professional assigned in the emergency room, including during weekends and holy days
- ETAT guidelines and job aids (posters) should be available and used by the professionals
- Emergency lab tests (Hgb, blood glucose, cross match, malaria smear) are available in the side lab and results are obtained timely.
- ETAT trained professionals are assigned in the pediatric emergency and triage unit, 24 hours a day and 7 days a week.

- A more senior person (preferably a pediatrician) is readily available for further management of children with emergency conditions

3.2.2 Hospitals have a pediatric OPD separate from adult OPD, with emphasis on IMNCI target diseases in managing U5 children

Every day, a large number of parents seek health care for their sick children, taking them to hospitals, health centers, pharmacists, doctors and traditional healers. The majority of sick children are treated in OPDs, and in most of them, history and signs and symptoms will determine a course of management that makes the best use of the available resources.

Layout, facility and staff competence for Pediatric Ambulatory Care

- Pediatric OPD & emergency room should be established in the same building or in very close proximity to each other.
- Well ventilated and illuminated OPD rooms with adequate supplies, guidelines/job aids, drugs and equipment should be set up. (Annex5)
- Spacious waiting area in the corridor of the OPD is arranged with chairs/benches for patients/parents
- Play ground is set for children visiting a hospital for ambulatory care
- Pediatric OPD block and each room should be clearly labeled
- A physician or IMNCI trained professional should manage children under the age of 5 years
- Children are given priority based on the triage findings (i.e. those with priority signs are given priority in the queue)
- The case management of sick children seen at OPD should follow national guidelines and recommendations, with reference to standard pediatric textbooks as appropriate.

Components of pediatric ambulatory care

- ORT corner/room is established within pediatric OPD
- Pediatric HIV care/ART clinic is considered as a specialty clinic and is set up within pediatric OPD and separate from adult HIV care/ART clinic. The clinic should have data room and examination room, and should contain all required supplies, equipment and pediatric ART drugs (see Annex 3 and 5)
- Specialty/follow-up clinics are functional based on the appointment schedule of the hospital

3.2.3 Comprehensive Neonatal Care Unit

In addition to the establishment of newborn corners at the maternity ward, hospitals should establish a comprehensive neonatal unit for the in-patient management of neonates. All newborns at the maternity and neonatal unit should have standard identification tags attached to the arm and/or leg of the newborn. Rooming in of all newborns with their mothers and early initiation (within one hour of delivery) of exclusive breast feeding should always be encouraged. Attention should be given to correct nutrition in sick neonates. No newborns should be discharged from a hospital in the critical first 24 hours of life, and without receiving essential NB care including birth doses of vaccines.

Neonatal care unit layout and physical structure

Neonatal Care Unit should be located as close as possible to the Labor Ward, including the rooms specified for operative deliveries. Ideally the unit should be immediately adjacent to the Labor Ward and on the same floor. The postnatal wards should also be in close proximity. **Components of the Neonatal Care Unit**

Neonatal unit should include:

- ✓ Well-equipped Neonatal Intensive Care Unit (NICU)
- ✓ Well ventilated KMC room
- ✓ Mothers' waiting rooms
- ✓ Isolation room for infectious cases
- ✓ Clean and illuminated resuscitation and/or procedure room with functional equipment

Facility, supplies and staff competencies

- Adequate water supply and functional hand washing basins are particularly important for neonatal unit
- Laboratory services that provide essential lab tests for diagnosing and managing sick newborns should be available all times
- Standard newborn care guidelines and job aids (such as pocket book on hospital care for children, NICU management protocol, etc) are available for use by the professionals
- Essential drugs, supplies and equipment should be readily available and accessible (see Annex 2 for the list of drugs, supplies and equipment)
- Functional referral and feedback mechanism should be established b/n neonatal unit and neonatal f/up clinic as well as maternity ward

- SOPs detailing the roles and responsibilities of staff, the frequency of neonatal evaluation by a nurse and by a physician, admission and discharge criteria, etc should be prepared and consistently used
- The neonatal unit, including the NICU should be staffed by professionals trained on neonatal care.

Triaging sick neonates and criteria for NICU admission

- Neonates referred from maternity or other health facilities are triaged to identify neonates:
  - ✓ that need immediate resuscitation
  - ✓ that need NICU admission,
  - ✓ that need admission to the isolation room,
  - ✓ that need to be admitted to the KMC room
  - ✓ that can stay with their mothers while receiving treatment

Admission to the NICU

- The following conditions usually require NICU admission:
  - ✓ Preterm (<37 completed weeks) and LBW (<2500 grams)
  - ✓ Birth asphyxia
  - ✓ Respiratory distress from different causes (MAS, HMD, infections, congenital heart diseases…)
  - ✓ Small for gestational age (SGA) babies, with complications
  - ✓ Neonates with seizures
  - ✓ Neonates with metabolic and endocrine problems (hypoglycemia, hypocalcemia…)
  - ✓ Neonates with hyperbilirubinemia
  - ✓ Neonates with congenital anomalies
  - ✓ Neonates with sepsis and meningitis

Mothers'/care givers rights and responsibilities

- Mothers and care givers of newborns and children admitted to hospitals have the right to know about the health status of their children and should be regularly communicated
- Informative, systematic and regular communication is essential to engage families in the care of their children. Mothers and care givers should be encouraged to be involved in the care of their children and health education in the future care of their children should be given.

3.2.4 Hospitals Have Functional Immunization/EPI Clinic

Immunization is a proven tool for controlling and even eradicating infectious diseases. Currently, the FMOH of Ethiopia in collaboration with UNICEF, WHO and other stakeholders is pushing

towards eradication of poliomyelitis, measles, and neonatal and maternal tetanus through immunization.

EPI Clinic Layout, Facility and Staff Competencies

- Hospitals should have functional EPI clinics providing all the primary vaccines within the pediatric/MNCH department, open on all working days.
- All the primary vaccines should be available in the EPI clinic
- Functional refrigerator is available and cold chain maintained
- EPI guidelines and job aids are readily available and in use
- Standard EPI register and appointment cards are printed in adequate quantities
- Disposable syringes and needles (including BCG needle) are available
- Registered clinical (MCH) nurses with special training on EPI are assigned in the EPI clinic
- EPI clinic is ideal unit for growth monitoring of well infants and for educating mothers on the care of their children

3.2.5 Pediatric In-patient Care (Wards)

Pediatric ward layout, physical structure and facility

- Hospitals should establish pediatric in-patient service separate from that of adults
- The following should be part of pediatric ward

✓ Therapeutic feeding room for children with complicated SAM
✓ Pediatric ICU or at least dedicated room for critically ill children next to nursing station
✓ Isolation room for children with communicable diseases
✓ Clean, ventilated procedure room with good light source
✓ Separate room for pediatric surgical cases
✓ Resuscitation room/table

- Each room should have clean beds and sheets should be changed daily
- Essential supplies, drugs and equipment should be available (Annex 6)
- Laboratory services that provide essential lab tests for diagnosing and managing sick children should be available all times
- Case management guidelines including pocket books and wall charts and job aids should be available and used, with reference to standard text books when required
- The ward room painting should be child friendly

Summary Pediatric In-patient Care Guidance

- Children admitted to the wards should be evaluated by physicians (preferably pediatricians) on daily basis (twice per day for critical children)

- Critically sick children should be evaluated by registered clinical nurses every 4 hours
- Vital signs should be measured every 6 hours for admitted children (more frequently if ordered by a physician)
- Providers should pay attention for correct nutrition for sick children to help them get better quickly
- Attention should be given to pain management in children (surgical cases, children with burns and malignancies, etc)
- Growth monitoring should be performed with age appropriate WHO growth charts for all U5 children admitted to the ward
- Admission and progress notes, vital sign sheets as well as discharge or death summaries should be attached to the patient charts

Section 4 Implementation Checklist and Indicators

1.1 Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Maternal, neonatal and child health service standards have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in the assessment handbook.

4.2 Implementation Checklist

Appendices 1 to 9 can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. This tool is not meant to measure attainment of each Operational Standard, but rather to provide a checklist to record implementation activities.

4.3 Implementation Indicators

Indicator for Maternal Health

No	Indicator	Formula	Frequency	Comment
1.	Proportion of pregnant mothers who are screened for syphilis	Total #of mothers screened for syphilis / Total # of mothers came for ANC follow up	Quarterly	ANC log book

2.	Proportion who have partners tested for HIV	Total #of partners tested for HIV/Total # of mothers came for ANC follow up	Quarterly	ANC log book
3.	Proportion of mothers who are seen at referral clinic	Total #of mothers seen at referral clinic / Total # of mothers came for ANC follow up	Quarterly	ANC log book
4.	Proportion with documented Birth planning (place of birth, transport…)	Total #of mothers with documented Birth planning / Total # of mothers came for ANC follow up	Quarterly	ANC log book
5.	Percentage who have chosen post-partum family planning	Total #of mothers chosen post-partum family planning / Total # of mothers came for ANC follow up	Quarterly	ANC log book
6.	Percentage of births followed with completed Partograph	Total #of mothers followed with completed Partograph / Total # of delivery	Quarterly	Partograph review
7.	Percentage of birth followed with safe child birth check list	Total #of mothers followed with completed safe child birth check list / Total # of delivery	Quarterly	Delivery registered
8.	Percentage of caesarean deliveries that used safe surgery checklist	Total # of mothers delivered with C/S and used safe surgery checklist/ Total # of mothers delivered with C/S	Quarterly	Safe surgery check list review
9.	RATE of institutional delivery (from benchmarked number)	Total # of deliveries /Expected number of deliveries by conversion by conversion factor of population	Quarterly	Delivery log book
10.	Percentage of women using a modern method of contraception at 6 weeks after childbirth, by type of method (including LAM)	Number of women using a modern method of contraception at 6 weeks after childbirth, by type of method (including LAM) /Total # of deliveries	Quarterly	PNC log book

Indicators for child health

No	Indicator	Formula	Frequency	Comment
1	Proportion of HWs assigned at pediatric triage and emergency unit trained in ETAT	# of HWS with ETAT training/Total # of HWs assigned to the unit*100	Bi-annually	
2	A) Cumulative # of LBW newborns admitted to the KMC room B) Survival rate of LBW (<2000gr) newborns admitted to the KMC room	A) Total number of LBW NBs admitted to the KMC room from beginning of year to end of reporting period	Quarterly	KMC register

		B) # of LBW NBs admitted to KMC room that survived/Total # of NBs admitted to KMC room*100		
3	Proportion of children admitted to pediatric wards for whom vital signs are measured Q 6hrs	# of charts with documented v/s q 6hrs/Total # of charts assessed*100	Quarterly	Patient charts
4	Proportion of U5 children admitted to the ward for whom growth monitoring is done	# of charts with documented growth monitoring/Total # of charts assessed*100	Quarterly	Patient charts
2.	Case fatality rate for newborns	NB deaths in the past 3 months in the hospital/total # of hospitalized NBs in the same period * 100	Quarterly	HMIS register
3.	% essential drugs and equipment available in the pediatric emergency unit	Number of essential drugs and equipment available in the pediatric emergency/Total number of essential drugs and equipment listed in the annex * 100	Every 6 months	

Source Documents

1. Federal Democratic Republic of Ethiopia: Ministry of Health, HSDP IV. Addis Ababa, Ethiopia: Annual Performance Report EFY 2004 (2011/2012); 2013.
2. Federal Ministry of Health, Health Sector Development Program IV 2010/11-2014/15. Addis Ababa: Federal Ministry of Health; 2011.
3. Federal Ministry of Health of Ethiopia, Health Sector Transformation Plan (HSTP) 2014/15-2019/20, Addis Ababa, 2015.
4. Windau-Melmer, Tamara. 2013. *A Guide for Advocating for Respectful Maternity Care*. Washington, DC: Futures Group, Health Policy Project.
5. Federal Democratic Republic of Ethiopia: Ministry of Health, Standard of Midwifery Care Practice in Ethiopia, August, 2013.
6. Federal Democratic Republic of Ethiopia: Ministry of Health, Management Protocol on Selected Obstetrics Topics, January, 2010
7. Technical and Procedural Guidelines for Safe Abortion Services in Ethiopia, Second edition, June 2014
8. Federal Democratic Republic of Ethiopia: Ministry of Health, National Guideline for Family Planning Services in Ethiopia, February – 2011
9. WHO recommendations on postnatal care of the mother and newborn. Geneva (Switzerland): World Health Organization (WHO); 2013 Oct. 62 (p. 120)
10. Federal Ministry of Health, National Mother and Baby Friendly Service Guideline, 2016
11. Integrated Management of Pregnancy and Childbirth, Standards for Maternal and Neonatal Care, WHO, 2007.
12. Pocket book of hospital care for children, second edition: WHO, 2013
13. Global Initiatives for Improving Hospital Care for children: State of the Art and Future Prospects PEDIATRICS Volume 121, Number 4, April 2008
14. Assessment Tool for Hospital Care for Children, Second Edition: WHO 2015

Appendices

Appendix 1: List of Emergency Drugs and Equipment for Child health

Equipment	Yes	No
Nebulizer		
Spacer		
Oropharyngeal (Guedel) Airways: at least 3 different sizes		
Self-inflating bags: adult and children		
Masks: 3 sizes for children		
Electric (or foot) suction pump and suction catheters: size 15 FG.		
Oxygen concentrator or oxygen cylinder with regulator, pressure gauge and flow mete		
Oxygen tubing, nasal prongs or catheters		
High pressure oxygen source with oxygen adopter and oxygen bag		
Sandbags		
Blankets		
Scissors		
Iris forceps without teeth		
Consumables		
Adhesive tape, at least 2 different sizes		
Cotton wool		
Cardboard to make splints		
IV Infusion sets		
Scalp vein needles (size 21 or 23 G)		
IV Cannula (size 22 or 24 G)		
Needles for intraosseous insertion (size 21G)		
Tuberculin syringes (if not available 2 cc syringe)		
Test strips and scale for blood sugar		
Adhesive tape		
Umbilical catheter, 3.5F or 5F		
Small clamps		
Scalpel		
Three way stop cock		
14 gauge stop angiocath / over needle intravenous catheter attached 5 or 10 ml syringe		
8 or 3 endotracheal tube ventilator adaptor		
Fluids and drugs		
Ringer's lactate or normal saline		
Normal saline with 5% glucose solution or half-strength Darrow's with 5% glucose solution		
Glucose 10% or 50% glucose		
ORS		
ReSoMal (commercially bought or prepared)		
Diazepam IV or Lorazepam		
Adrenaline		
Salbutamol puff		
Corticosteroids: ▪ Hydrocortisone IV ▪ Dexamethasone IV ▪ Prednisolone PO		

Appendix 2: List of NICU equipment and essential drugs for child health

Equipment	Yes	No
Incubators		
Radiant warmers		
Phototherapy machines		
Cardiac monitors		
CPAPs		
Pulse oximeter		
Perfuser		
Oxygen concentrators		
Oxygen cylinders with gauge		
Nasal prongs		
Room heaters		
Suction machines		
Ambu bags and different sizes of face masks		
Neonatal cribs		
Neonatal BP apparatus		
Bulb syringes		
Resuscitation table		
Refrigerator		
Endotracheal tubes		
Oropharyngeal airways		
Infant weight scales		
Umbilical catheterization set		
Exchange transfusion set		
IV stands		
Thermometers		
Supplies		
Sterile and clean gloves		
Syringes and needles		
IV sets and blood transfusion sets		
IV cannulas and butterfly needles		
Soap and antiseptic solutions		
NG tubes		
Drugs		
Antibiotics: ▪ Ampicillin injection (250mg, 500mg, 1g) ▪ Cefotaxime sod (500mg, 1g vials) ▪ Ceftazidime (500mg, 1g, 2g vials) ▪ Ceftriaxone (250mg, 500mg, 1g vials) ▪ Clindamycin (150mg/ml) ▪ Gentamicin (10mg/ml, 40mg/ml) ▪ Nafcillin (1g, 2g vials) ▪ Penicillin G (crystalline, 5MIU…) ▪ Vancomycin (500mg, 1g, 5g vials)		
Ringer’s lactate or normal saline		
Normal saline with 5% glucose solution		
Glucose 10%, 40% or 50% solution		
Anticonvulsants ▪ Diazepam 5mg/ml ampule ▪ Phenobarbitoneinj, 60mg/ml, 65mg/ml ▪ Phenytoin inj, 50mg/ml		

Appendix 3: List of guidelines and job aids for child health

Unit (department)	List of GL and job aids	Yes	No
Emergency Unit	ETAT guideline (manuals)		
	Pocket book on hospital care for children (national)		
	ETAT flow sheets (for triage, airway and breathing, circulation, convulsion, etc)		
Pediatric OPD	Hospital care for children (national)		
	ART guideline		
	TB guideline		
	Nutrition guideline		
	Malaria guideline		
	Standard pediatrics text books		
Neonatal unit	Hospital care for children (national)		
	NICU guideline		
	Neonatal Resuscitation flow sheet		
	Standard pediatrics text books		
EPI clinic	EPI guideline		
Pediatric ART clinic	Consolidated HIV care/ART GL (national)		
	National TB guideline		
	National nutrition guideline		
	National PMTCT guideline		
Pediatric wards	Pocket Book on Hospital care for children (national)		
	Consolidated HIV care/ART guideline (national)		
	National TB guideline		
	National nutrition guidelines		
	Standard pediatrics text books		

Appendix 4: List of pediatric ARVs and OI drugs

ARV Drugs	Yes	No
▪ FDC: AZT/3TC/NVP		
▪ FDC: AZT/3TC		
▪ FDC: ABC/3TC/NVP		
▪ FDC: TDF/3TC/EFV		
▪ FDC: TDF/3TC		
▪ FDC: AZT/3TC/LPV/r		
▪ FDC: ABC/3TC/LPV/r		
▪ FDC: LPV/r sprinkles		
OI drugs		
▪ Co-trimoxazole suspension (240mg/5ml)		
▪ Co-trimoxazole tablet (480mg)		
▪ INH tab (100mg)		
▪ Nystatin suspension (100,000 U/ml)		
▪ Clotrimazole mouth paint, 1%		
▪ Miconazole tab (250mg), oral gel 25mg/ml		
▪ Amoxicillin suspension (125mg/5ml, 250mg/5ml)		
▪ Amoxicillin/clavulanic acid suspension		
✓ 156mg/5ml		
✓ 312mg/5ml		
✓ 228mg/5ml		
✓ 457mg/5ml		

Appendix 5: Facility, Supplies and Equipment for Pediatric OPD and ART Clinic

Functional hand washing basins	Yes	No
Examination beds with clean sheets		
Table and chair for the physician (clinician)		
Weight and height measuring scales for infants and children		
MUAC tapes		
Thermometers		
Otoscopesand torches		
Pediatric BP apparatus (different sizes)		
Disposable and sterile gloves and alcohol swab		
Syringes and needles as required		
Printed papers such as admission cards, prescription papers, lab request forms, X. ray and U/S request forms, referral papers		
HMIS/IMNCI registers		

Appendix 6: Facility, Supplies and Equipment for Pediatric Wards

	Yes	No
General		
Functional hand washing basins in each room		
Functional showers and toilets for staff		
Functional showers and toilets for patients		
Printed papers:		
History sheets		
Order sheets		
Prescription and lab request papers		
Consultation papers		
Discharge and death summary forms		
Referral papers		
Equipment and supplies		
Pediatric BP apparatus (different sizes)		
Thermometers		
LP sets		
Bone marrow sets		
Endotracheal tubes and oral airways		
Ambu bags with different sizes of masks		
Stretchers		
Sterile and clean gloves		
Syringes and needles (different gauges)		
Urinary catheters		
Kidney dishes		
Rectal tubes		
Enema sets		
Chest tubes		

Appendix7 Essential drugs that must be available in emergency drug cabinet of L& D ward

In the emergency drug cabinet on the L&D ward or refrigerator		Yes or No
1.	Uterotonic medication (Oxytocin, Misoprostol,Misoptrostol Po and/ or Ergometrine)	
2.	Magnesium sulphate	
3.	Diazepam	
4.	Antihypertensive medication (Nifedipine and Hydralazine)	
5.	40% glucose	
6.	IV Cannula	
7.	Lidocaine	
8.	Syringe & needle	
9.	IV fluids (crystalloids)	
10.	Tetracycline eye ointment	
11.	Sterile gloves	
12.	Atropine	
13.	Vitamin K	
14.	Adrenaline	
15.	Ampicillin IV	
16.	Ca gluconate	
17.	TDF/3TC/EFV (ARV drugs)	
18.	Nevirapine syrup	
19.	Aminophylline	
20.	Hydrocortisone	

Appendix 8 Medical equipment in labor and delivery ward and operation theatre (equipment must be functional at the time of assessment)

S.N	Item)	Yes/No
1.	Functional Sphygmomanometer (BP apparatus)	
1.	Stethoscope	
2.	Suction machine portable	
3.	Pinnardstethetescope(Fetoscope)/doppler	
4.	Ultra Sound	
5.	Thermometer	
6.	Filled oxygen tank with flow meter	
7.	Nasal prongs for oxygen administration	
8.	Catheter for oxygen administration	
9.	5 delivery sets, at least two sterile	
10.	Sterile suture kit	
11.	Forceps	
12.	Vacuum extractor	
13.	Urinary Catheter	
14.	HIV test kits (KHB, Stat pack)	
15.	Stand lamp	
16.	Speculum for vaginal examination	
17.	Craniotomy set	
18.	Sterilizer (Steam or dry)	
19.	Ambu-bag with sterile mask	
20.	Bed with accessories	
21.	IV stand	
22.	Mask for oxygen administration	
23.	Cord cutting/clumping set	
24.	Radiant Warmer	
25.	Towels for drying and wrapping new-born babies	
26.	weighing scale for baby	
27.	Tape to measure baby length and Head circumference	
28.	Functioning clock	
29.	Two Episiotomy set	
30.	Suction bulb for NB resuscitation	
31.	Long sleeve glove for removal of retained placenta	
32	NASG	
33	MVA set (at least two)	
34	E & C set (at least two)	

Appendix 9 List of drugs and equipments that should be available in operating theater

S. no	In operation theatre	Yes or No
1.	Ketamine injection	
2.	Oxygen inhalation	
3.	Thiopental iv	
4.	Halothane	
5.	Muscle relaxant (Suxamethonium and Vecronium)	
6.	Lidocaine injection and or Bupivacaine	
7.	Lidocaine + epinephrine injection	
8.	Ephedrine injection	
9.	Dexamethasone im	
10.	Diazepam /iv/	
11.	Suction	
12.	Oxygen	
13.	Ambu bag (Adult)	
14.	Ambu bag (Neonatal)	
15.	Spinal Needle	
16.	3 Caesarean section sets at least one ready	
17.	2 Laparotomy sets with at least one ready	

9 Laboratory Services

Table of Contents

Abbreviations

ART	Antiretroviral therapy
AFB	Acid Fast Bacilli
ALT	Alkaline Transferase
BPR	Business Process Re-engineering
CPD	Continuing professional development
DNA	Deoxyribonucleic acid
EPHI	Ethiopian Public Health Institute
EQA	External Quality Assessment
FMHACA	Food Medicine and Healthcare Administration and Control Authority
FMOH	Federal Ministry of Health

HMIS	Health management information system
IATA	International Air Transport Association
IQC	Internal Quality Control
NBBS	National Blood Bank Service
OHSO	Occupational Health and Safety Officer
PCR	Polymerase Chain Reaction
PIHCT	Provider Initiated HIV Counselling and Testing
PMTCT	Prevention of Mother to Child HIV Transmission
PPE	Personal Protective Equipment
PT/ EQA	Proficiency Testing/ External Quality Assessment/
QA	Quality Assurance
QC	Quality Control
QI	Quality Improvement
RHB	Regional Health Bureau
RPR	Rapid Plasma Reagin
SOPs	Standard Operating Procedures
STS	Sample Transfer Service
TAT	Turnaround time
TPHA	Treponema Pallidum Haem agglutination
TPPA	Treponema Pallidum Particle Agglutination
UPS	Uninterrupted Power Supply

Section 1 Introduction

Laboratory services strengthen the practice of modern medicine by providing information to end users to accurately assess the status of a patient's health, make accurate diagnoses, formulate treatment plans, and monitor the effects of treatment. Laboratories are a major source of health information for epidemiological and surveillance purposes, and are often the first sites for the detection of disease outbreaks. To provide such functions laboratory data must be recorded and reported through the appropriate channels in an accurate and timely manner.

The current laboratory service in Ethiopia is organized in a structure that follows the general health care delivery system of the country, incorporating specialized, general and primary hospitals in addition to health centres and health posts. At the apex of this system, there are currently twelve Regional Reference Laboratories and a National Reference Laboratory at the Ethiopian Public Health Institute (EPHI). A detailed description of the responsibilities of laboratories at different tier levels in Ethiopia is presented in Appendix A.

As part of the Ethiopian laboratory network, hospitals receive specimens for analysis from the lower level of laboratories and also from the same level of facilities and may refer specimens to a higher level facility, in accordance with agreed protocols and guidelines. This chapter sets standards and guidelines to ensure that hospital laboratories provide accurate, reliable and timely test results for patient care. Effective laboratory management ensures the implementation of standard laboratory quality management system to perform agreed tests with minimal 'down time' in service provision.

Section 2 Operational Standards for Laboratory Services

1. The hospital has a clear laboratory management structure and accountability arrangement with well-defined roles and responsibilities for the provision of laboratory services organized into central, emergency and inpatient laboratory services.
2. The hospital laboratory management has established system for management of documents and records that are maintained, controlled, reviewed and approved to ensure the provision of quality laboratory services.
3. The hospital laboratory has established system to monitor the effectiveness of its customer service programme.

4. The hospital laboratory has and implements a proper management system for its equipment that includes the calibration, maintenance and inventory to ensure the provision of accurate, reliable and timely test results.
5. The hospital has a laboratory supplies management system.
6. The hospital laboratory shall implement a process control system that monitors the processes from pre analytical to post analytical phases of testing, including an established internal quality control (IQC) and participates in external quality assurance (EQA).
7. The hospital laboratory has established incident handling and reporting system which includes errors or near errors (also called near misses).
8. The hospital has established laboratory management information system.
9. The hospital laboratory should be designed and organized at least for bio safety level 2 or above and work environment is clean and well maintained at all times.
10. The laboratory shall design a backup laboratory service through availing back laboratory equipment or and through backup laboratory facility.
11. The hospital laboratory has appropriate storage and stock management systems for blood and blood products received from blood banks.
12. The hospital laboratory blood bank service in collaboration with respective regional blood back service shall have mobilization of blood donation strategy through community awareness programs.
13. The hospital laboratory blood bank service shall have appropriate cold chain system for blood and blood products received from blood bank service until used by prescribers.
14. The hospital laboratory blood bank service shall report blood administration and patient safety information to respective regional blood banks.

Section 3: Implementation Guidance

3.1 Organization and Management of lab services

3.1.1 Laboratory management structure

The laboratory shall have its own organizational structure that enables the laboratory to communicate internally and externally with vendors, other health institutions to create collaboration and partnership and EQA program providers by working under the organizational umbrella of the hospital. Each laboratory must have an organizational chart (organogram) that describes the management and supervisory arrangements in the laboratory.

The hospital laboratory should have functional central, emergency and inpatient laboratories. Both emergency and inpatient laboratories should provide services 24hrs a day and 365 days a year. The central laboratory should have a functional overview of all other labs to ensure the provision of quality services.

3.1.2 Laboratory Management role

The laboratory shall be managed by an experienced laboratory professional or persons with the competence in their field and in management. The duties and responsibilities of the laboratory manager, quality officer and safety officer should be documented.
The laboratory manager (or designate/s) shall:

a) Provide effective leadership of the medical laboratory service, including planning, budgeting and overall financial management, in accordance with organizational assignment.
b) By representing the hospital, liaise and work effectively with applicable regulatory authority and accrediting agencies, appropriate administrative officials, the healthcare community, and the patient population served.
c) Ensure that there are appropriate number of staff with the required education, training and competence to provide medical laboratory services that meet the needs and requirements of the users
d) Ensure the implementation of laboratory quality policy
e) Implement a safe laboratory environment in compliance with good practice and applicable requirements
f) Develop hospital laboratory specific annual plan and ensure that adequate budget is allocated
g) Ensure the provision of clinical advice with respect to the choice of examinations, use of the service and interpretation of examination results
h) Provide professional development programs for laboratory staff and opportunities to participate in scientific and other activities of professional laboratory organizations
i) Define, implement and monitor standards of performance and quality improvement of the medical laboratory service or services
j) Maintain strong communication/relationship among clinical and non-clinical staff.

3.1.3 Competency assessment

Competency assessment is a tool to check the knowledge and skill of the professionals on a given or scheduled time. Competency assessment can include theoretical, practical or both at a time
Competency assessment should have a Plan and systematically given after every training and on regular scheduled bases.

Competence assessment of new employees should be administered during employment training, 6 months later and annually thereafter to verify the individual's continued demonstration of necessary knowledge, skills, and correct practice of work processes and procedures.
Competence assessment should also be performed when all staff members are introduced to new or changed work processes or procedures.
When new tests are involved, competence needs to be assessed before reporting test results. This is necessary to ensure readiness for effective delivery of those processes and procedures in the actual work environment.
When problems are identified with employee performance, retraining and reassessment of employee competency must occur.

3.2 Document and Records

Documents provide written information about policies, processes, and testing procedures and should be stored in the laboratory quality manual for each laboratory. Documents are a reflection of the laboratory's organization and its quality management. A well-managed laboratory will always have a strong set of documents to guide its work.

3.2.1 Quality manual/Policy

The laboratory shall prepare policy/manual that gives broad and general direction to the laboratory quality system defined by the organization and endorsed by hospital management.

Procedure

The laboratory shall also prepare technical and managerial procedures for all processes. A procedure tells "how to do it", and shows the step-by-step instructions that laboratory staff should meticulously follow for each activity. The term standard operating procedure (SOP) is often used to indicate these detailed instructions on how to do it.

3.2.2 Standard Operating Procedures

Standard Operating Procedures (SOPs) are created for regularly recurring work processes that are conducted in the laboratory. This is done to ensure that activities are performed consistently and in a manner that achieves results of the highest quality, and that the laboratory is run as efficiently as possible. All laboratory staff should participate in the creation of SOPs. Each SOP should be approved by the Laboratory Manager and Quality officer prior to implementation.
SOPs should be available for:

1. **Specimen management**

All SOPs for specimen management should include:

a) Action upon receipt of a sample:

Upon receipt the laboratory should check the availability of the requested test in that laboratory, including the turnaround time for results. If the service is not available, the laboratory should notify the customer and refer the sample to a different laboratory capable of performing the request test. If the service is available, the sample must be checked according to the acceptance and rejection criteria. A specimen can be rejected if:

- It is received without a request form,
- It is unlabeled, incompletely labelled or if the name on the label does not match the name on the request form,
- It is leaking,
- It is in a broken container,
- It is the wrong type of specimen for the requested test,
- It was not transported according to requirements,
- The time since collection is too long(depending on the type of test),
- It is hemolytic (depending on the type of test),
- There is insufficient volume of a specimen, or
- There is bacterial overgrowth present.

b) Documentation of sample receipt:

A log book should be used to record the receipt of samples. This should include:

- The name of the patient and identification number,
- The source of the specimen,
- The name of the submitter, and
- The date of collection.

2. All testing procedures:

All SOPs for individual tests should include:

a) The full test name, including the full name of the methodology used (commonly used abbreviations should be listed at the beginning of the SOP),
b) The types of reactions, specimens, or organisms involved in the test,
c) Guidelines for the storage of specimens to ensure their integrity until testing is complete,
d) The clinical reasoning for performing the test,
e) Any calculations and formulas needed to obtain a result,
f) The methodology used, including the limitations of procedures and reagents,
g) Standards by which a sample is accepted or rejected,
h) Safety issues related to that particular test,
i) The test procedure, including:
    - A complete set of instructions

- Detailed descriptions such as measuring units, etc.
- How to prepare slides, solution, calibrators, control, reagents, stains, etc. for use

j) The criteria for what to do if a test system becomes inoperable,
k) A corrective action guideline (when necessary),
l) Interpretation of results, including:
   - Reportable ranges
   - Critical or panic values
m) Methods of disposal for specimens and other products used,
n) References to relevant and pertinent materials,
o) Criteria for the referral of specimens to and from other health facilities, and
p) Transport requirements (e.g. cold chain) if the specimen is to be transferred to another laboratory.

SOPs should also be available for:

a) Testing algorithms (The procedure for analyzing a sample that has more than one test request)
b) The maintenance and monitoring of each piece of equipment
c) Sample referrals and transportation
d) Safety procedures and waste management, including proper specimen disposal
e) Quality assurance procedures

Each SOP should be reviewed on a regular basis (usually, annually).The revision status and due date for next review should be stated on policy.

2.1. Job Aids

✍ Job aids, or work instructions, are shortened versions of SOPs that can be posted at the bench for easy reference on performing a procedure. They are meant to supplement, not replace, the SOPs.

2.2. Formats

✍ The document designed as a tool to collect information in the course of all laboratory activity and converted to record after capturing certain information of the laboratory activity.

2.3. Records

✍ Records are the collected information produced by the laboratory in the process of performing and reporting a laboratory test.

Characteristics of records are that they:

- Need to be easily retrieved or accessed;
- Contain information that is permanent, and does not require updating.

Some examples of records include completed forms, charts, sample logs, patient records, quality control information and patient reports. Information is the major

product of the laboratory, so manage it carefully with a good system for the laboratory's documents and records.

2.4. Document identification

The laboratory shall have a uniform approach to document identification, format, status and issue control, and to the procedure for document review and preparation is required for the continued integrity of the system.

2.5. Archiving

The quality officer is responsible for the proper archiving of documents and records. The laboratory respects the national regulations or legislations concerning the retention time of all records. A copy of an obsolete document is kept to provide a means for review if the situation arises.

3.3 Customer Service

Each laboratory should develop a system to collect and measure data on how much the laboratory services and products satisfy the costumer (the patients and clinical staff) and should take steps to address any problems identified. This could be done through suggestion boxes, suggestion books and/or satisfaction surveys as part of or additional to the overall hospital's clinical governance and quality improvement programme.

The laboratory should have a mechanism to record complaints from patients, staff and clients. All complaints and problems reported to the laboratory as well as corrective action taken should be documented and the handling procedure should be part of the overall hospital's complaint handling and management system.

The hospital should ensure the laboratory management produces a list of all tests that are provided by the laboratory based on the national regulatory guidelines, including the fee per test and turnaround time. The list should be updated on regularly and should be posted in all sample collection areas and readily available to all clinical staff and patients. The hospital laboratory have at least minimum test menu based on FMHACA standards.

3.3.1 Laboratory Handbook

A laboratory handbook should be prepared by the laboratory for the benefit of clinical staff ordering diagnostic tests. The handbook should be distributed to all sample collection and patient examination areas including wards, emergency room, operating room, labour and delivery, outpatient department etc.

The laboratory handbook should include:

- A list of all tests with current price available in the laboratory and appropriate turn-around time for each test.

- A list of tests that may be taken by the laboratory and referred to a higher tier for analysis, and turn-around time for each
- Important information that should be included in the laboratory handbook:
  - Clinical significance of the test
  - Basis for reference range
  - Critical range notification
  - Test interference or procedure limitations
  - Any other pertinent test characteristics
  - Interpretation
  - Contact names and telephone numbers of key personnel
  - Name and address of the laboratory
  - Hours of operation of the laboratory
  - List of tests that can be ordered
  - Detailed information on sample collection requirements
  - Sample transport requirements, if any
  - Expected turnaround times
  - Description of how urgent requests are handled—this should include a list of what kinds of tests are done on an urgent basis, what are the expected turnaround times, and how to order these tests
- Test ordering procedures
- Sample collection and sample disposal procedures

3.3.2 Advisory service

The laboratory should provide an advisory service for clinical staff to assist with the interpretation of results and to provide advice on the process of decision making. To achieve this, laboratory staff should make comments on the result report, either commenting on the interpretation of the results and/or suggesting additional investigations that might aid the diagnosis. Laboratory personnel should be available to answer queries from clinical staff about individual test results or the need for further investigation. Additionally, the laboratory should identify ‘panic results’ (i.e. a result which should be communicated immediately to the physician for urgent action) for each investigation and processes by which such results are communicated immediately to the ordering clinician.

3.3.3 Information notification

The hospital laboratory should have a process to update clinical staff and others on areas such as a start of new tests, discontinuation of tests and if there is a delay in test results etc. through registered telephone call or by filling notification format.
A list of all tests with current price available in the laboratory and appropriate turn-around time should be posted in all services areas.

There should also be a forum through which laboratory staff can discuss individual patient care with clinicians when necessary. Possible mechanisms include:

a) 'In house' education sessions at which all laboratory staff members who attend workshops/trainings share this knowledge with their laboratory and other clinical colleagues.

b) Clinical review meetings of all clinical staff (nurses, physicians, X-ray, lab, pharmacy or any other relevant staff). These meetings should be a forum for presentations and discussion on general clinical issues. Laboratory staff should participate in these meetings and could use these meetings to provide clinical advice and update information about laboratory services to clinical staff.

3.4 Laboratory Equipment Management

The hospital laboratory has a system for proper laboratory equipment management to create and ensure the provision of accurate, reliable and timely test results of its minimum standard. The laboratory should be connected to a back-up power supply (generator) in cases of interruption to the mains electrical supply. Additionally, the laboratory should have a telephone(s), fax machine, sufficient computers and printers for administrative purposes and internet connection if possible.

i. Equipment Life book and Inventory

Every laboratory should have a life book and inventory mechanism of all equipment and instruments that includes:

- Name of manufacturer
- Model and serial number
- Date of purchase or acquisition
- Date of installation
- Purchase cost
- Current location
- Electric power requirement
- Record of contracted maintenance, and
- Record of equipment down time

Manufacturers' manuals should be attached to, or stored beside, each instrument. Laboratory equipment should only be used by appropriately trained staff (s). An equipment usage logbook or form can be completed by laboratory staff to indicate the duration of use and name of the person who used the equipment.

ii. Laboratory Equipment Maintenance

There should be a predefined program for preventive maintenance, calibration and monitoring of equipment function. Maintenance information should be properly documented and a maintenance activity should follow a minimum of manufacturer's recommendations. The Quality officer (QO) is responsible to ensure that instruments in the laboratory are maintained properly, daily controls and calibrators are run, and maintenance logs are kept up to date.

Curative maintenance of laboratory equipment must be performed by trained senior professionals or engineers (bio-medical engineers) as soon as possible to minimize equipment down time and decrease client waiting time in the facility. The equipment supplier office or bio-medical engineer contact information must be posted on specific equipment. The record of curative maintenance should be signed and documented in equipment life book.

1. Preventive Maintenance

Periodic maintenance prior to equipment failure will prevent accidental breakdown and increase performance. Systematic Preventive Maintenance includes adjusting, calibrating, changing parts, following shut down procedures, and performing general cleaning procedures (such as blowing, rinsing, wiping, flushing). Cleaning procedures should adhere to Standard Operating Procedures that apply to each instrument.

The Operator laboratory professional (user) should perform daily, weekly, monthly and/or quarterly preventive maintenance for each type of equipment in the laboratory. All preventive maintenance activities should be recorded in a maintenance log for each piece of equipment.

Service engineers from the appropriate company or EPHI should perform semi-annual or annual preventive maintenance on the larger more complex instruments. A log must be completed with copies held on site and by the service engineer.

iii. Equipment calibration

There should be a timetable for the calibration and maintenance of each piece of equipment. Calibration should be performed every six months if specific instructions are unavailable.

Otherwise calibration should be performed:

- Based on the specifications of the manufacturer
- After a complete change of reagents
- Where controls show unusual trends
- After major preventive maintenance
- After replacement of critical parts

When the procedure requires more calibration

b. Laboratory Reagents and Supplies Management System

Reagents should be stored according to manufacturer's recommendations.

All reagents and other supplies should be:

- catalogued and stored accordingly to aid retrieval,
- Reagents and supplies should be dispensed first expires first out.
- properly stored according to manufacturer's instructions,
- discarded when the shelf life is expired,
- labelled to indicate identification and, when applicable, significant titre strength or concentration,
- marked with date of preparation or receipt,
- Marked with the date opened, the date that the reagent was first opened must be written on the container with a standard plastic laminated form. If reagents are dispensed from intact stock containers by dilution or any other treatment, the date of preparation as well as the duration should be written,
- The components of reagent kits of different lot numbers should not be interchanged unless otherwise specified by the preparer,.
- Reagent validation and monitoring should be done prior to use by authorized bodies.

3.5.1 Inventory control of Reagent and supply

Laboratory management should have input into the purchase, storage and distribution of laboratory reagents and supplies. If another department (for example finance or pharmacy) is responsible for the purchase of laboratory reagents and supplies there should be consultation with the Laboratory Manager prior to procurement.

The laboratory should establish a control system to catalogue the supply of reagents and supplies. This can be done through using stock/bin card or an electronic cataloguing system. Reagent name, supply on hand and expiration date of reagents and supplies should be recorded in the stock/bin card or electronic system. This will allow laboratory staff to compare the current stock in the laboratory and in the warehouse to avoid unexpected stock out.

Transaction of commodities should take place by using formats like internal facility report and requisition form (IFRR) (refer to Pharmacy Services chapter for more details) in order to make the transaction traceable and auditable.

3.5.2 Reagent and supply storage condition

The reagents and supplies should be stored in appropriate storage areas with better security, adequate ventilation and monitored appropriate temperature. The storage temperature should be monitored with standardized and calibrated thermometers. The reagents and chemicals should not be exposed to direct sunlight. Laboratory reagents and supplies should be stored in a mini-store that is managed by the Laboratory Manager.

c. Process control

Process control is comprised of several factors that are important in ensuring the quality of the laboratory testing processes. These factors include quality control for testing, participating in external quality assessment program, appropriate management of the sample, including collection and handling, and method verification and validation.

i. Pre-analytical phase

Sample management:

- The laboratory should prepare requisition form to provide all detailed information. (Patient ID, tests requested, time and date of the sample collection, source of the sample, clinical data and contact information for the health care provider requesting the test).
- The laboratory should have specimen management guideline which includes how to handle incorrectly identified specimens.
- Each primary sample should have a unique accession number with date and time of receipt.
- Specimen collection SOP should be there for all sample types.
- Urgent requests should be handled with special attention and develop communication procedure with physicians.
- The laboratory should have a clear collection, labelling (minimum of two identifiers), preservation and transport (triple packaging) procedure.
- There should be a safety practices (leaking or broken containers, contaminated forms, other biohazards) in the laboratory
- The laboratory develops a system for evaluating, processing and tracking samples timely.
- The laboratory results should be approved and assigned by responsible personnel before it goes out from the laboratory
- The laboratory should keep a register (log) of all incoming and referred samples. The register should include date and time of collection; date and time the sample was received in the laboratory; sample type; patient name and demographics; laboratory assigned identification; and performed tests.

- The laboratory should develop an SOP for specimen storage, retention and disposal and practice according to these SOPs.
- Referral samples should be registered by the laboratory for tracking and its results should be written in a log to insure receipt of results and for further reference.

3.6.2 Analytical phase

3.6.2.1 Internal Quality Control (IQC) programme

The goal of IQC is to detect, evaluate, and correct errors due to test system failure, environmental conditions or operator performance, before patient results are reported. All laboratory tests should have quality control mechanism. Quality control processes vary, depending on whether the laboratory examinations use methods that produce quantitative, qualitative or semi quantitative results. These examinations differ in the following ways:

Quantitative examinations measure the quantity of an analyte present in the sample, and measurements need to be accurate and precise. The measurement produces a numeric value as an end-point, expressed in a particular unit of measurement. The laboratory should follow the following steps during implementing a quantitative QC:

- Establish policies and procedures
- Assign responsibility for monitoring and reviewing
- Train all staff in how to properly follow policies and procedures
- Select good QC material
- Establish control ranges for the selected material
- Develop graphs to plot control values—these are called Levey–Jennings charts
- Establish a system for monitoring control values
- Take immediate corrective action if needed
- Maintain records of QC results and any corrective actions taken.

Qualitative examinations are those that measure the presence or absence of a substance, or evaluate cellular characteristics such as morphology. The results are not expressed in numerical terms, but in qualitative terms such as “positive” or “negative”; “reactive” or “non-reactive”; “normal” or “abnormal”; and “growth” or “no growth”.

- The laboratory should keep records of all QC processes and corrective actions
- When problems occur, investigate, correct, and repeat patient testing

Semi-quantitative examinations are similar to qualitative examinations, in that the results are not expressed in quantitative terms. The difference is that results of these tests are expressed as an **estimate** of how much of the measured substance is present. Results might be expressed in terms such as “trace amount”, “moderate amount”, or “1+, 2+, or 3+”.

3.6.2.2 External Quality Assessment (EQA) programme

EQA is a method that allows for comparison of a laboratory's testing to a source outside the laboratory. This comparison can be made to the performance of a peer group of laboratories or to the performance of a reference laboratory.

The laboratory should participate in EQA challenges, and this should include EQA for all testing procedures performed in the laboratory. Currently EPHI coordinates EQA activities at national levels and provide panels different laboratory tests in Ethiopia. Laboratory EQA programs are implemented in the form of:

- Proficiency testing—external provider sends unknown samples for testing to a set of laboratories, and the results of all laboratories are analysed, compared and reported to the laboratories.
- Rechecking or retesting—slides that have been read are rechecked by a reference laboratory; samples that have been analysed are retested, allowing for inter-laboratory comparison.
- On-site evaluation—usually done when it is difficult to conduct traditional proficiency testing or to use the rechecking/retesting method.

The laboratory should ensure that all EQA samples are treated in the same manner as patient samples tested and this will be supported with an SOP. Procedures should be developed to address:

- Handling of samples—these will need to be logged, processed properly and stored as needed for future use.
- Analyses of samples—consider whether EQA samples can be tested so that staff does not recognize them as different from patient samples (blinded testing).
- Appropriate record keeping—Records of all EQA testing reporting should be maintained over a period of time, so that performance improvement can be measured.
- Investigation of any deficiencies—for any challenges where performance is not acceptable.
- Taking corrective action when performance is not acceptable—the purpose of EQA is to allow for detection of problems in the laboratory, and to therefore provide an opportunity for improvement.
- Communication of outcomes to all laboratory staff and to management.

Hospital laboratory must comply with all national EQA requirements. Another method of inter-laboratory comparison is the exchange of samples among a set of laboratories.

3.6.3 Post analytical Phase

The laboratory result should be reported on a standard report format that contains laboratory, patient, sample and other information (name of requester, person authorising result release, reference range, etc...) related to the test/s performed. The laboratory request should be cross-checked with results to ensure all tests have been completed. The result should be reviewed and signed out by name of authorised personnel before released to requester or patient. The laboratory should also have a policy and procedure for how it handles samples unsuitable for testing and how all samples are managed after reporting the result.

d. Occurrence/Incidence management

An occurrence is any event that has a negative impact on an organization, including its personnel, the product of the organization, equipment, or the environment in which it operates. All such events must be addressed in an occurrence management program.

The laboratory should take actions that may be undertaken to rectify occurrences, including the following.

- Preventive actions involve a planned and organized evaluation of processes and procedures to identify potential error points, so action can be taken to prevent the errors from ever occurring. Preventive actions require planning and team participation.
- Remedial action, or remediation, is the fixing of any consequences that result from an error. For example, if an erroneous result has been reported, it is essential to immediately notify all persons concerned about this error and to provide the correct result.
- Corrective actions address the cause of the error. If a test was done incorrectly, resulting in an incorrect result, corrective actions sort out why the test was not performed properly and steps are taken so that the error does not happen again.
- The laboratory uses the outcomes of internal audit , PT, customer feedback and all other information derived from the tracking of quality indicators to improve laboratory performance
- The outcomes of the action taken have to be checked and monitored to determine the effectiveness of improved quality of lab performance
- The laboratory needs to have documented occurrence reports indicating the root cause of the problem(s) and corrective and preventive actions taken to prevent recurrence

e. Laboratory Information Management System (LIMS)

Information management is a system that incorporates all the processes needed for effectively managing data—both incoming and outgoing patient information. The information management system may be entirely paper-based, computer-based, or a combination of both.

The laboratory information system shall be strengthened and mainstreamed into other HMIS and disease control information systems and have a system to ensure that the laboratory has an effective information management system in place in order to achieve accessibility, accuracy, timeliness, security, confidentiality and privacy of patient information. When planning and developing an information management system, whether it is a manual, paper-based system, or an electronic system, there are some important elements to consider:

- Unique identifiers for patients and samples
- Standardized test request forms (requisitions)
- Logs and worksheets
- Checking processes to assure accuracy of data recording and transmission
- Protection against loss of data
- Protection of patient confidentiality and privacy
- Effective reporting systems
- Effective and timely communication.
- It is important to establish a means to protect against loss of data. For paper based systems, this will involve using safe materials for recording and storing the records properly. For computerized systems, scheduled or regular backup processes are very important.
- It is of utmost importance to safeguard a patient's privacy and, in this regard, security measures must be taken to protect the confidentiality of laboratory data.
- Laboratory directors/manager is responsible for putting policies and procedures in place to ensure confidentiality of patient information are protected.
- Attention should be given to the reporting mechanism to ensure that it is timely, accurate, legible and easily understood.
- There shall be pre-defined schedule and guideline for proper data back-up.

f. Facility and safety

A laboratory safety program is important in order to protect the lives of employees and patients, to protect laboratory equipment and facilities, and to protect the environment. It is a minimum requirement for a hospital to have a biosafety level 2 laboratories.

- The responsibility for developing a safety program and organizing appropriate safety measures for the laboratory is assigned to a laboratory safety officer. In

smaller laboratories, the responsibility for laboratory safety may fall to the laboratory manager or even to the quality officer. The steps for designing a safety management program include:

- Developing a manual to provide written procedures for safety and biosafety in the laboratory; organizing safety training and exercises that teach staff to be aware of potential hazards and how to apply safety practices and techniques—training should include information about universal precautions, infection control, chemical and radiation safety, how to use personal protective equipment (PPE), how to dispose of hazardous waste, and what to do in case of emergencies; setting up a process to conduct risk assessments—this process should include initial risk assessments, as well as ongoing laboratory safety audits to look for potential safety problems.
- The safety officer should be assigned responsibility for ensuring that there is an adequate supply of appropriate equipment for safety and biosafety, such as:
- Personal Protective Equipment (PPE)
- Fire extinguishers and fire blankets
- Appropriate storage and cabinets for flammable and toxic chemicals
- Eye washers and emergency shower
- Waste disposal supplies and equipment
- First aid equipment.

The laboratory shall put in place measures to safeguard against malicious use of chemicals, infectious agents and other harmful materials. Policies should be put in place that outline the safety practices to be followed in the laboratory. Standard laboratory safety practices include:

- Limiting or restricting access to the laboratory;
- Washing hands after handling infectious or hazardous materials and animals, after removing gloves, and before leaving the laboratory;
- Prohibiting eating, drinking, smoking, handling contact lenses, and applying cosmetics in work areas;
- Prohibiting mouth pipetting;
- Using techniques that minimize aerosol or splash production when performing procedures—biosafety cabinets should be used whenever there is a potential for aerosol or splash creation, or when high concentrations or large volumes of infectious agents are used;
- Preventing inhalation exposure by using chemical fume hoods or other containment devices for vapours, gases, aerosols, fumes, dusts or powders;
- Properly storing chemicals according to recognized compatibilities—chemicals posing special hazards or risks should be limited to the minimum quantities required to meet short-term needs and stored under appropriately safe conditions (i.e. flammables in flammable storage cabinets)—chemicals should not be stored on the floor or in chemical fume hoods;
- Securing compressed gas cylinders at all times;

- Decontaminating work surfaces daily;
- Decontaminating all cultures, stocks and other regulated wastes before disposal via autoclave, chemical disinfection, incinerator or other approved method;
- Implementing and maintaining an insect and rodent control programme;
- Using PPE such as gloves, masks, goggles, face shields and laboratory coats when working in the laboratory;
- Prohibiting sandals and open-toed shoes to be worn while working in the laboratory;
- Disposing of chemical, biological and other wastes according to laboratory policies.
- Hospital Laboratory staff who have direct contact with harmful infectious agents should be vaccinated. For example, they should be vaccinated for Hepatitis B.
- Construction and renovation of laboratories shall be in conformity with national standards and guidelines (Refer FMHACA National Minimum Standard for different Health Facilities).

g. Backup laboratory services

The Hospital ensure that there is no interruption to laboratory services in the event of: staff shortage, equipment breakdown, and prolonged power outages, stock outs of reagents and consumables, fire, natural disasters.

The backup laboratory service improves the provision of the service to deliver results through avoiding interrupted service. There for the Hospital shall have MOU with other nearby facilities (Regional laboratory) and uses back up service whenever their services get interrupted. The Hospital laboratory should avail back up laboratory equipment and supplies to avoid service interruption.

Where the hospital laboratory uses another laboratory as a backup, the performance of the back-up laboratory shall be regularly reviewed to ensure quality results.

h. Blood Transfusion Service

Hospital laboratories should establish a mini blood bank and provide a blood transfusion service. Blood received from the regional blood bank should be stored in regularly monitored refrigerator/s. Quality assurance measures should be in place to ensure the correct storage temperature is maintained at all times. Refrigerators or freezers for blood storage should have a back- up electricity supply in case of mains failure.

3.11.1 Facility and systems requirements

The hospital shall have transfusion committee and signed MOU with respective blood bank service and should have enough space, equipment, to perform compatibility test and to store blood and blood products received from the blood bank service.

The minimum area of the hospitals' blood and blood product store should be 12 M^2.The size will increase depending on the amount of products the health facility receives from the blood bank service and should have the following:-

1. Laboratory refrigerator to store whole blood at 2-6$^{o}_{c}$
2. Deep freezer to store plasma products <-18^{0}c
3. Platelet agitator to maintain viability of the platelet product before transfusion
4. Blood warmer
5. Space for compatibility testing
6. Water bath

3.11.2. Documents and Records of blood bank services

The hospital mini blood bank have well created, reviewed, approved and authorized documents that is helpful for blood transfusion service like policies ,process .procedures ,job aids and forms.

3.11.2.1. Records

A Facility wristband containing patient's name and unique Facility ID number must be placed on the patient prior to specimen collection and must remain on the patient until completion of the transfusion.

Collection of records of clerical errors and serious adverse effects of transfusion should be in place to ensure positive identification of specimens, requisition forms, blood and blood components, and patients.

3.12. Storage Devices for Blood and Blood Components

Whenever possible, temperatures of refrigerators and freezers in which blood and/or blood components are stored should be fitted with a device that continually measures

and records the temperature inside the equipment. A maximum and minimum temperature recording thermometer should be placed in the refrigerator or freezer and the following temperatures should be recorded a minimum of four times a day (every 6 hours).

These temperatures should be recorded and the maximum and minimum thermometer reading should be re-set following each reading.

3.13.Awareness creation and blood donation mobilization strategy in hospitals

The hospital shall have awareness creation and community mobilization strategy in collaboration with respective blood bank service

1. Schedule time for awareness creation every month
2. Assign health professional to educate the community about blood donation at a time of health education sessions.
3. Organize awareness creation sessions on the need for blood donation to selected groups of the population from different organizations like higher officials, religious leaders, famous people, and teachers that can influence people in the community.
4. The hospital may support local level blood donor's group/clubs whenever they conduct motivational and awareness creation programmers.

3.14. Transport and Issue of Blood and Blood Components

The standard transfusion request form prepared by National Blood Bank Services should be filled appropriately.Blood units are packed in a sealed, temperature-validated transport container according to SOP for the type of component being issued.Only one patient's components are packed per transport container for facilities that do not have appropriate blood storage equipment.For other facilities, components requiring different storage temperatures should be packed in different transport containers.

3.14.1. Issue of Blood Components for Transfusion

Facilities are required to perform a final check of records relating to the component at the time of issue. One of the records to be checked is existing records of the recipient. These records provide the previous ABO and RhD type of the recipient, which should match the blood group of the unit to be issued.

3.14.2. Special instances

1. Neonatal transfusion (i.e. for infants under the age of 4 months): To perform neonatal exchange transfusions, the freshest (less than 7 days old), usually group O RhD negative, blood is used.

2. ABO group compatible red blood cell-containing components shall be issued, which should also be ABO compatible with the mother.

3. RhD compatible red blood cell components shall be issued, which should also be compatible with the mother.

3.14.3. Blood transfused in cases of dire emergency:

The health facility shall have procedures for the issuing of blood and blood components on an emergency basis when full compatibility testing is not possible. In this instance, the patient's physician must weigh the risk of transfusing blood or blood components that have not undergone compatibility testing, or those for which compatibility testing has not been completed, against the risk of delaying transfusion until compatibility testing is complete. When a delay in transfusion may be detrimental to the recipient, blood and blood components that do not meet requirements should only be released when the following conditions are met:

1. The recipient of a transfusion whose blood group is not known should receive blood which is Group O and RhD negative (particularly if the recipient is a female with child bearing potential).

2. Recipient of a transfusion whose blood group is known should receive ABO and RhD-compatible, if there has been time to test a current specimen.

3.14.2. Blood Administration

Hospital is responsible for the administration of blood and blood components shall provide procedures for the use of all transfusion equipment such as blood warmers and the various filters that are available. Information should be made available regarding the obtaining of informed consent and the patient monitoring that is required during transfusion as well as the signs and symptoms indicative of an

adverse transfusion event. Procedures should be available for the recognition, evaluation, and treatment and reporting of adverse events.

Thawing of FFP should be accomplished using a validated thawing device, specifically designed to thaw frozen plasma. The thawing device should have a temperature monitoring device.

3.14.3. Adverse transfusion events

The transfusing health facility may want to develop forms to encourage the recognition and assist in the reporting and management of adverse events related to transfusion, such as transfusion-transmitted infections and hemolytic transfusion reaction. The health facility should encourage the reporting of these events.

When transmission of an infectious disease is suspected to be the result of transfusion, the hospital shall report that information to the respective blood bank service.

The hospital is responsible for transfusing blood and blood components shall have appropriately trained and experienced personnel available to provide advice on the use of blood and blood components, particularly in the case of transfusion events in which the treating physician may have limited experience, such as massive transfusions, exchange transfusions, platelet transfusions and the treatment of hemophilia

Section 4 Implementation Checklist and Indicators

4.1. Assessment Tool for Operational Standards

In order to determine if the Operational Standards of Laboratory Services have been met by the hospital an assessment tool has been developed which describes criteria for the attainment of a Standard and a method of assessment. This tool can be used by hospital management or by an external body such as the RHB or FMOH to measure attainment of each Operational Standard.

4.2. Implementation Checklist

The following Table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. The Table does not measure attainment of each Operational Standard but rather provides a checklist to record implementation activities.

Table 1 Laboratory Service Checklist

S. No	Activities	yes	No
1.	The hospital has a clear laboratory management structure and accountability arrangement with well-defined roles and responsibilities for the provision of laboratory services organized into central, emergency and inpatient laboratory services.		
2.	The hospital laboratory management shall have a system for management of documents and records for use and maintenance of controlled, reviewed and approved to ensure the provision of quality laboratory service		
3.	The hospital laboratory has established system to monitor the effectiveness of its customer service programme		
4.	The hospital laboratory has and implements a proper management system for its equipment that includes the calibration, maintenance and inventory to ensure the provision of accurate, reliable and timely test results		
5.	The hospital has a laboratory supplies management system		
6.	The hospital laboratory shall implement a process control system that monitors the processes from pre analytical to post analytical phases of testing, including an established internal quality control (IQC) and participation in external quality assurance (EQA		
7.	The hospital laboratory has established incident handling and reporting system which includes errors or near errors (also called near misses).		
8.	The hospital has established laboratory management information system		
9.	The hospital laboratory should be designed and organized at least for bio safety level 2 or above and work environment is clean and well maintained at all times.		
10.	The laboratory shall design a backup laboratory service through availing back laboratory equipment or and through backup laboratory facility,		
11.	The hospital laboratory has appropriate storage and stock management systems for blood and blood products received from blood banks		

12.	The hospital laboratory blood bank service in collaboration with respective regional blood back service shall have mobilization of blood donation strategy through community awareness programs.		
13.	The hospital laboratory blood bank service shall have appropriate cold chain system for blood and blood products received from blood bank service until used by prescribers		
14.	The hospital laboratory blood bank service shall report blood administration and patient safety information to respective regional blood banks		

4.3 Indicators

Table 2 Laboratory Services Indicators

No	Indicator	Formula	Frequency	Performance Target
1.	Proportion of laboratory samples rejected	Total number of samples rejected by laboratory services (inpatient, outpatient and emergency) ÷ Total number of samples received (inpatient, outpatient and emergency) x 100	Monthly	<1%
2.	Test interruption: a) Proportion of test interruptions due to supply shortage b) Proportion of test interruption due to equipment failure	a) Test interruption days due to supply shortage/12 months *100 b) Test interruption days due to equipment failure/12 months *100	Quarterly	<1%
3.	Number of tests with internal quality control	Total number of laboratory tests with routine quality control performed/Total tests available	Monthly	100%
4.	a) Proportion of External quality assessment (EQA) participation b) Percentage of EQA performance	a) Total number of tests enrolled with external quality assessment program/total tests available *100 b) EQA feedbacks greater or equal to 80%.	Quarterly	a) 100% b) 100%
5.	Proportion of equipment downtime in the year	The number of days in a month that the equipment is not functional due to breakdown/ 365 days*100	Quarterly	0%
6.	a) Proportion of uninterrupted power supply b)Proportion of uninterrupted water supply	a) Presence of uninterrupted power supply /365 days*100 b) Presence of uninterrupted water supply /365 days*100	Quarterly	100%
7.	Proportion of laboratory staff with competency evaluation	Number of staff with competency evaluation file / total number of staff*100	Annually	100%

8.	Proportion of laboratory tests meets pre-set Turnaround time (TAT)	Number of tests meets TAT/total number of tests *100	Monthly	≥80 %
9.	Proportion of customer satisfaction in laboratory services upheld	Number of customers satisfied ÷ total number of customers participated in satisfaction survey x 100	Quarterly	≥80 %
10	Proportion of blood units cold chain maintained in the blood bank	Number of blood units within the recommended temperature ÷ total number of blood units received x 100	Monthly	100%
11	Proportion of blood units issued to the patient	Number of blood units issued to the patient ÷ total number of blood units received x 100	Monthly	100%

Source Documents

1. Federal Democratic Republic of Ethiopia Ministry of Health. (2009, April). *National Notifiable Diseases and Conditions Reporting Rule and General Control Measures for the Control of Public Health Threats.* Ethiopian Public Health Institute. Addis Ababa, Ethiopia.

2. Ethiopian Health and Nutrition Research Institute. (2008, December). *Ethiopian Health and Nutrition Research Institute Master Plan for the Public Health Laboratory System in Ethiopia*, Second Edition *(2009 – 2013).* Addis Ababa, Ethiopia.

3. National Notifiable Diseases and Conditions Reporting Rule and General Control Measures for the Control of Public Health Threats. FMOH, Ethiopian Public Health Institute. April 2009.

4. CLSI/NCCLS. Application of a Quality Management System Model for Laboratory Services; Approved Guideline—Third edition. CLSI/NCCLS document GP26-A3. Wayne, PA: NCCLS; 2004. www.clsi.org.

5. CLSI/NCCLS. A Quality Management System Model for Health Care; Approved Guideline—Second Edition. CLSI/NCCLS Document HS01-A2. Wayne, PA: NCCLS; 2004. www.clsi.org.

6. WHO laboratory quality standards and their implementation, southEast Asian region, 10-24pages, 2011.

7. AABB Technical Manual and Standards for Blood Banks and Transfusion Services, 15th edition, 2005.

8. AfSBT standard for Blood transfusion service guidance document 1st edition page 1-24 , 2014.

Appendices

Appendix A the Laboratory Network: Responsibilities of Laboratories at Different Tier Levels in Ethiopia

A tiered laboratory network is an integrated system of laboratories organized in alignment with the public health delivery network in a country. There should be four levels of Laboratories in the national network:

1. **Level I-Primary:** Health post and health centre laboratories that primarily serve outpatients.

2. **Level II-Secondary:** Laboratories in intermediate referral facilities (e.g., district hospitals).

3. **Level III-Tertiary:** Laboratories in a regional referral hospital that may be part of a regional or provincial health bureau.

4. **Level IV-National Reference Laboratory**: The national public health reference laboratory for the country.

The tiered levels of a laboratory system and the testing performed at each level may vary depending on the population served (e.g., infants, adults), physical infrastructure, electricity, water, road conditions, and the availability of trained technical personnel in-country.

Level I Laboratories

Level I laboratories would consist of health post or health enter laboratories that would primarily serve outpatients. Essential infrastructure, such as clean water, refrigeration and electricity, may or may not be available. These laboratories would serve as peripheral branches of Level II laboratories, which would be the centre or hub. Health posts may refer specimens to health centre laboratories. Diploma level staff at Level I laboratories would be very limited, with usually no more than one trained laboratory assistant or nurse providing services. The laboratory would offer diagnostic and monitoring services for HIV/AIDS, TB and malaria. If essential infrastructure were lacking, then the on-site test menu would be restricted to manual tests. Sites with reliable power and water would perform certain automated chemistry tests required for antiretroviral therapy (ART) monitoring. Same day performance and delivery of results must be available while the patient is present for immediate counselling, treatment and regimen modification.

When required testing exceeds the scope of services available from Level I facilities, the “parent” Level II laboratories would provide arrange of consultant services, including receipt of referral specimens and patients.

Level II Laboratories

Level II laboratories would consist of district hospitals or primary hospital laboratories that perform tests beyond the capabilities of Level I facilities. Health posts may refer specimens to Health Centre Laboratories under Level I. Serving inpatients; these laboratories would have dedicated laboratory space, formally trained personnel, UPS systems, and a consistent source of reagent grade water. The laboratory would be staffed by a minimum of three formally trained technologists or technicians. One staff member who has managerial skills would serve as the senior or supervisory technologist.

The Level II laboratories would have more extensive test menus for diagnoses and treatment. Consolidating testing at the district level for certain tests provides necessary volumes for automated equipment plat forms. The Level II laboratories would coordinate the services of Level I laboratories in the district as well as serve as reagent and supply reservoir/back-up repositories for these laboratories.

In addition, Level II laboratories would provide the following consultant services and support for Level I laboratories:

- Managerial oversight of an outreach program of peripheral primary laboratories (World Health Organization [WHO],2003a)
- Referral laboratory services with a more extensive test menu
- On-site quality assessment visits
- Assistance with resolving technical problems
- Data management support with a strong paper-based laboratory information system(should be part of a national system of data collection by the Ministry of Health [MOH])
- Development and implementation of quality assurance (QA) activities (including but not limited to, QC, QI and EQA/PT)
- Periodic review of QC
- Information and training for adequate specimen collection
- Coordination of EQA
- Collection of data for assessment of quality indicators
- Approval and annual review of SOPs and policies to ensure alignment with current practices
- Assistance with development of SOPs and safety procedures
- Staff development/training, performance management, competency assessment, and retraining
- Coordination of courier/transport services
- Assistance with results reporting and record retention
- Equipment maintenance and service support including review of maintenance logs

- Follow-up on laboratory incident and accident reports
- Assessment of safety management practices

Level III Laboratories

Level III laboratories would consist of laboratories in tertiary referral facilities such as regional or provincial hospitals. These laboratories would perform a complete menu of testing for HIV/AIDS, TB and malaria as well as testing form any other diseases. Level III laboratories would complete the more sophisticated tests that Level II laboratories were not able to perform. These facilities must have dedicated laboratory space that would include a separate microbiology space, a Bio safety Level3 designated area, and UPS systems. Reagent grade water would also be required. Formally trained, diploma level technologists who are able to meet workload demands would staff Level III laboratories. One technologist who has managerial skills would serve as the laboratory supervisor. Level III laboratories would act as laboratory resource groups for the facilities in their regions.

In addition, Level III laboratories would provide the following services:

- A more comprehensive test menu than that provided at Level II laboratories
- Coordinate laboratory services and information management with other Level III laboratories
- Perform assessments of laboratories in the region; evaluate the QA data from laboratories in the region
- Coordinate surveillance data collection from lower levels in an effort to obtain country-wide statistics
- May collect and report inter-laboratory comparisons and EQA data for the region
- Develop training programs and coordination of continuing education
- Assure adequate requisition and reporting mechanisms as well as record retention procedures
- Standardize units, methodologies and reference ranges based on national reference laboratory recommendations
- Determine the amount of patient history/clinical presentation required for tests referred to other levels
- Provide logistical and management support to their service areas

Level IV Laboratories (National Reference Laboratories)

Level IV national reference laboratories are recommended to strengthen laboratory capacity for diseases of public health concern. Ideally, they would provide linkages with clinical trials and other public health laboratories, forming integrated laboratory networks. Senior program employees, laboratory management and senior laboratory technologists/scientists would staff these laboratories. Level IV laboratories would possess the infrastructure, equipment, information systems, and logistical capabilities of sophisticated reference laboratories. In some countries lacking a unique national reference laboratory, Level III laboratories may serve as national reference laboratories

Level IV National Reference Laboratories would:

- Perform all testing performed at the other levels
- Perform molecular and esoteric testing beyond the technical capabilities of Level III laboratories (e.g., nucleic acid assays, HIV drug resistance studies, TB drug susceptibility studies)
- Develop laboratory standards and processes for laboratory accreditation
- Develop monitoring and evaluation activities for laboratories
- Serve as the national coordinator for HIV, TB, and malaria laboratory programs
- Maintain national database of equipment and maintenance in country
- Participate in international EQA programs and develop/oversee national EQA programs
- Provide input on national laboratory policy development
- Determine what information needs to be supplied with the test result to better interpret the test
- Provide courier and logistics management support for the regions
- Develop and implement testing algorithms and reflex protocols for laboratory utilization
- Establish standards for quality management and assist with policy and procedure development
- Provide assistance with reference range validations and development of national reference ranges specific to equipment/methods used
- Coordinate the collection of surveillance data to obtain and monitor country-wide statistics
- Introduce and implement new technologies, appropriate for each level, to reflect current best practices
- Select and evaluate diagnostic tests
- Define sensitivity and specificity requirements in order to select methods that would be evaluated with a method validation plan

Appendix B: List of minimum available tests, equipments and consumables

These shall be available in each hospital tier system according to FMHACA minimum standards.

1. The following minimum equipments and consumables shall be available in primary hospitals

Tests	Major Equipment

Clinical chemistry:
• Blood glucose
• Liver function tests
  ○ ALKP
  ○ AST
  ○ ALT
  ○ GGT
  ○ Total bilirubin
  ○ Direct bilirubin
  ○ Total protein
  ○ Albumin
• Renal function tests
  ○ Urea
  ○ Creatinine
  ○ Uric acid
	➢ Autoclave
	➢ Timer
	➢ Clinical chemistry analyser (Automated or semi-automated)
	➢ Glucometer
	➢ Power surge protectors
	➢ Weighing balance
	➢ Micropipettes of different volumes
	➢ Timer with alarm

Parasitology: • Stool microscopy • Blood film for malaria and other hemoparasite/Malaria Rapid Test	➢ Microscope ➢ Slide ➢ Staining reagents ➢ Rapid test kits
Urine and body fluid analysis: • Urinalysis • CSF analysis • Ascitic fluid • Pleural fluid	➢ Microscope ➢ Slide ➢ Staining reagents ➢ CSF analysis reagents
Mycology: • KOH test	➢ Microscope ➢ Slide ➢ KOH

Haematology: • Haemoglobin • Total WBC count • Differential white cell count • Peripheral blood film • ESR • Haematocrit • Platelet count	➢ Haemoglobin meter ➢ Haematology analyser (Automated) ➢ Blood roller/mixer ➢ Water bath ➢ Refrigerator ➢ Binocular microscope x10, x40, x100 ➢ Haemocytometer ➢ Microhematocrit centrifuge ➢ Microhematocrit reader ➢ Differential counter ➢ Tally counter ➢ Deep freezer ➢ Centrifuge ➢ Timer ➢ Distillation unit
Serology: 1. H.Pylori 2. HBs Ag 3. HCV 4. ASO 5. RF 6. RPR 7. Salmonella Typhi-O 8. Salmonella Typhi-H 9. Proteus-OX_{19} 10. HIV-test 11. HCG 12. Blood Group: Anti-A, Anti-B, Anti-D, Compatibility testing and Cross match	➢ All serological test kits ➢ Shaker
Bacteriology: • Gram stain, Ziehl Neelson stain and Indian Ink	➢ All necessary bacteriology equipments

2. The following minimum equipments and consumables shall be available in General Hospital.

Tests	**Major Equipment**
Clinical chemistry: • Blood glucose • Lipid profile o Cholesterol	➢ Autoclave ➢ Timer ➢ Clinical chemistry analyser (Automated) and/or chemistry analyser (semi-

○ Triglyceride ○ LDL ○ HDL • Serum electrolytes ○ Na+,K+,Cl- • Liver function tests ○ ALKP ○ AST ○ ALT ○ δ GT ○ Total bilirubin ○ Direct bilirubin ○ Total protein ○ Albumin • Renal function tests ○ Urea ○ Creatinine ○ Uric acid • Cardiac function tests ○ LDH ○ CK-MB ○ Troponin ○ CPK • Hormonal tests ○ T3 ○ T4 ○ TSH ○ FSH ○ LH	automated) ➢ Glucometer ➢ PC and a printer ➢ Power surge protectors ➢ Weighing balance ➢ Micropipettes of different volumes ➢ Timer with alarm ➢ Hormonal assay analyser
Parasitology: • Stool microscopy • Blood film for malaria and other hemoparasite/Malaria Rapid Test • Occult blood	➢ Binocular microscope ➢ Slide ➢ Staining reagents ➢ Rapid test kits ➢ Occult blood test kits
Urine and body fluid analysis: • Urinalysis • CSF analysis	➢ Binocular microscope ➢ Slide ➢ Staining reagents ➢ CSF analysis reagents

Mycology: • KOH test	➢ Binocular microscope ➢ Slide ➢ KOH
Haematology: • Haemoglobin • Total WBC count • Differential white cell count • Peripheral blood film • ESR • Hematocrit • Platelet count • Bleeding time • Reticulocyte count • prothrombin time	➢ Haemoglobinometer ➢ Hematology analyzer (Automated) ➢ Blood roller/mixer ➢ Water bath ➢ Coagulometer ➢ Refrigerator ➢ Binocular microscope x10, x40, x100 ➢ Haemocytometer ➢ Microhematocrit centrifuge ➢ Microhematocrit reader ➢ Differential counter ➢ Tally counter ➢ Deep freezer ➢ Centrifuge ➢ Timer ➢ Vortex mixer ➢ Distillation unit

Serology: • H.Pylori • Troponin • HBs Ag • HCV • Toxoplasma latex • ASO • RF • RPR • TPHA • CRP • Salmonella Typhi-O • Salmonella Typhi-H • Proteus-OX19 • HIV-test • HCG • Blood Group o Anti-A o Anti-B o Anti-D o Compatibility testing o Cross match	➢ All serological test kits ➢ Shaker ➢
Bacteriology: • Gram stain • Ziehl Neelson stain • India Ink • Culture	➢ All necessary microbiology equipments has to be mentioned

3. The following minimum equipments and consumables shall be available in Comprehensive Specialized Hospital.

Tests	**Major Equipment**

Clinical chemistry:
• Blood glucose
• Lipid profile
  o Cholesterol
  o Triglyceride
  o LDL
  o HDL
• Serum electrolytes
  o Na+,K+,Cl-
• Liver function tests
  o ALKP, AST, ALT, δ GT
  o Total bilirubin
  o Direct bilirubin
  o Total protein
  o Albumin
• Renal function tests
  o Urea
  o Creatinine
  o Uric acid
• Cardiac function tests
  o LDH
  o CK-MB
  o Troponin
  o CPK
• Hormonal tests
  o T3, T4, TSH, FSH, LH
  o Testosterone
  o Prolactin
	➢ Autoclave
	➢ Timer
	➢ Clinical chemistry analyzer (Automated)
	➢ Chemistry analyzer (semi-automated)
	➢ Glucometer
	➢ PC and a printer
	➢ Bunsen burner
	➢ Power surge protectors
	➢ Weighing balance
	➢ Spectrophotometer/ Colorimeter
	➢ Micropipettes of different :
	➢ Hemacytometers
	➢ Hemacytometer cover slips (standardized thickness)
	➢ Micro capillary tubes (if dilutions are not needed)
	➢ WBC pipette
	➢ RBC pipette
	➢ Pipette bulb Petri dish and cover
	➢ Timer with alarm
	➢ Hormonal assay analyzer

Parasitology: • Stool microscopy • Blood film for malaria and other hemoparasite/Malaria Rapid Test • Occult blood	
Urine and body fluid analysis: • Urinalysis • CSF analysis	
Mycology: • KOH test • Fungal culture •	
Microbiology Smear and Culture **Hematology:**	

• Haemoglobin • Total WBC count • Differential white cell count • Peripheral blood film • ESR • Hematocrit • Platelet count • Bleeding time • Reticulocyte count • prothrombin time • Hb electrophoresis • Lupus Erythematosus **Serology:** 13. H.Pylori 14. Troponin 15. HBs Ag 16. HCV 17. Toxoplasma latex 18. ASO 19. RF 20. CD4 count 21. RPR 22. TPHA 23. CRP 24. Salmonella Typhi-O 25. Salmonella Typhi-H 26. Proteus-OX_{19} 27. HIV-test 28. Viral load 29. Blood Group (Anti-A, Anti-B, Anti-D, Compatibility testing and Cross match) **Bacteriology:** • Gram stain • Ziehl Neelson stain • India Ink, Culture and sensitivity test	

Hematology: • Haemoglobin • Total WBC count • Differential white cell count • Peripheral blood film • ESR • Hematocrit • Platelet count • Bleeding time • Reticulocyte count • prothrombin time • Hb electrophoresis • Lupus Erythematosus **Serology:** 30. H.Pylori 31. Troponin 32. HBs Ag 33. HCV 34. Toxoplasma latex 35. ASO 36. RF 37. CD4 count 38. RPR 39. TPHA 40. CRP 41. Salmonella Typhi-O 42. Salmonella Typhi-H 43. Proteus-OX_{19} 44. HIV-test 45. Viral load 46. Blood Group (Anti-A, Anti-B, Anti-D, Compatibility testing and Cross match) **Bacteriology:** • Gram stain • Ziehl Neelson stain • India Ink, • Culture and sensitivity test	➢ Haemoglobinometer ➢ Automated Hematology analyzer ➢ Blood roller/mixer ➢ Water bath ➢ Coagulometer ➢ Refrigerator ➢ Electrophoresis machine ➢ Binocular microscope x10, x40, x100 ➢ Haemocytometer ➢ Microhematocrit centrifuge ➢ Microhematocrit reader ➢ Differential counter ➢ Tally counter ➢ Deep freezer ➢ Centrifuge ➢ Timer ➢ Vortex mixer ➢ Distillation unit ➢ CD4 machine ➢ Viral load machine ➢ Autoclave ➢ Dry oven ➢ Safety cabinet ➢ Refrigerator ➢ Deep freezer ➢ Water bath ➢ Incubator ➢ PH meter ➢ Digital balance ➢ Microscope ➢ And other major culture and sensitivity equipments

AppendixC Sample Preventive Maintenance Log

Equipment Type	**Inventory Number**
Model	**Serial No.**

Preventive maintenance performed:

1.	
2.	
3.	
4.	

Spare parts changed and other materials used:

No.	**Item**	**Quantity**

User comments		
Date	**Signature**	**Date**

Service engineer comments and required follow-up	
Preventive maintenance performed by	
Signature	**Date**

Appendix D Sample Corrective Maintenance Log

Equipment type	**Inventory Number**
Model	**Serial No.**

Description of equipment failure
Cause of equipment failure (if known)
Part of machine / equipment to be maintained

Corrective action **Time required**		
Spare parts replaced **1.** **2.** **3.** **4.** **5.** **6.**		
Engineer 1	**Signature 1**	**Date**
Engineer 2	**Signature 2**	**Date**

User comments		
Date	**Signature**	**Date**

Appendix E: National SOP Template

NAME INSTITUTION

TITLE:	**Revision Date:**
Document Number: 01	**Status:**
Section: Documents and Records	**Page:**

Purpose

Abbreviations

Materials

Reagents

Reagents preparation:

Reagents stability and storage:

Supplies

Sample

Sample type	Amount required	Transport and Storage	Stability

Limitations:

Special Safety Precautions

Use table if necessary

Maintenance

Step	Action
1	

Prepared by (Authority):

Department of Infectious and Non Infectious Diseases Ethiopian Health and Nutrition Research Institute Addis Ababa

TITLE:	**Revision Date:**
Document Number:	**Status:**

Quality Control

Control	Level	Stability	Frequency	Preparation (y/n)

Control preparation:
Note:

Section: Documents and Records *Page:*

Step	Action

Calculation

Result Interpretation

Expected Values

Principle

Clinical Utility

Reference

DECLARATION

I have read and understand this SOP and I agree to consistently follow the procedure as described.

Print Name	Signature	Date

APPENDIX F: SAMPLE SOP FOR MICROSCOPE MAINTENANCE AND OPERATION

NAME OF INSTITUTION

STANDARD OPERATING PROCEDURE

TITLE: Microscope maintenance and operation		SOP #:
Applies to: All who perform microscopy	Effective Date: 17 Oct, 2012	PAGE 4 OF 440

PROCEDURE CHANGE HISTORY:

Version #	Replaced Version		Prepared by	Reviewed by	Approved by
01	00	Name			
		Signature			
		Date			
Description of Changes: Standardization and Update					
Location of Mater Copy: Master File (shelf-02, Folder 26)			Date of discontinuation:		

ANNUAL REVIEW: NAME OF INSTITUTION

Review Date	Name	Signature

Purpose

This procedure provides instructions to perform maintenance and operate the Microscope System.

Materials

Reagents
Lens-cleaning fluid
Lens paper
ethyl-alcohol

Supplies
● Cotton swab
● Gauze
●Clean cloth

Equipment
●Air brush
●Microscope cover After use
●Microscope

Special Safety Precautions

- Always be familiar with safe laboratory practice
- Keep work areas clean and free from obstructions.
- Use equipment and its sub-systems for their designed purpose only.

- Defective or under service equipment may be duly marked and kept separately.
- Be careful to use chemicals or materials from correctly labeled containers.
- Don't use solvents for washing skin, glassware and work benches.
- Clean the spillages immediately to avoid harmful effects.

Refer to Safety Manual for standard safety procedures

Maintenance

- Use Microscope PM Maintenance and Corrective maintenance log sheets and refer to Operator's Manual.
- Daily maintenance to be done on daily base before and after the work.
- Monthly maintenance to be done the first Monday of each month.
- The annual maintenance to be done depending on the plan.

Important steps for maintaining a microscope

1. Verify the adjustment of the mechanical stage. It must move gently in all directions (X-Y) and must stay in the Position selected by the microscopist.
2. Test the focus adjustment mechanism.
3. The focus Selected by the microscopist must remain stable. The height mu change from that assigned by the microscopist.
4. Verify the functioning of the diaphragm.
5. Clean all the mechanical components.
6. Lubricate the microscope according to the Manufacturer's recommendatio
7. Confirm the adjustment of the specimen holder (gripping device).
8. Verify the optical alignment.

Procedure

A. Turn on the microscope light source.

B. Adjust binoculars and eyepieces to your personal preference.

C. Adjust power source for a comfortable light intensity. Be sure that Koehler illumination has been achieved.

D. Secure slide in stage slide holder.

E. Rotate nosepiece for desired magnification objective, and raise or lower stage.

F. With one hand, focus on specimen by using coarse- and fine-focus' knobs.

G. With the other hand, move the slide by turning the stage drive.

H. When reading is finished, rotate objective away from slide.

I. Release tension on slide holder, and remove slide.

J. If oil was used, wipe oil from objective with lens paper.

K. Turn light down or off.

L. Eyestrain should not develop if the microscope is set up properly and the chair is at the correct height for the user.

Result Interpretation Refer to the specific test procedures for result interpretation.

Related Procedures and Documents Microscope Operator Manual

APHL Training Manual

Microscope Service Manual

Reference Microscope Operator Manual

DECLARATION

I have read and understand this SOP and I agree to consistently follow the procedure as described.

Print Name	Signature	Date

Appendix G List of NotifiableDiseases

The FMoH declares the following conditions to be of concern to the public health and reportable as required by law:

a. Acute Flaccid Paralysis (AFP)/Polio
b. Avian Human Influenza
c. AWD/Acute watery diarrhoea/
d. Cholera
e. Dysentery
f. Measles
g. Malaria
h. Meningococcal meningitis
i. Neonatal Tetanus
j. Plague
k. Relapsing fever
l. Rift Valley Fever(RVF)
m. SARS
n. Smallpox
o. Typhoid Fever
p. Typhus
q. Viral Haemorrhagic Fever
r. Yellow Fever
s. Any unusual occurrence of infectious or communicable disease or any unusual or increased occurrence of any illness that may indicate public health hazard, includingany single case or multiple cases of a newlyrecognized, emergentorre- emergent disease or disease-producing agent, including newly identified multi-drug resistant bacteria or a no ve lin fluenza strain such as apandemicin fluenza strain.
t. Any outbreak, epidemic, or unusual or increased occurrence of any illness that mayindicate an outbreak or epidemic .This includes suspected or confirmed outbreaks of food borne disease, water borne disease, disease caused by antimicrobial resistant organisms,anyinfectionthatmayindicateabioterrorismevent,orofanyinfectionthat may indicated a public health hazard.

In addition to the reportable conditions, the FMOH requires the following emergency illnesses or health conditions to be of concern to the public health and reportable:

i. Clusters of Respiratory illness (including upper or lower respiratory tract infections,

difficulty breathing and Adult Respiratory Distress Syndrome);

ii. Clusters of Gastrointestinal illness (including vomiting, diarrhoea, abdominal pain, or any other gastrointestinal distress);

iii. Influenza-like constitutional symptoms and signs;

iv. Clusters neurologic symptoms or signs indicating the possibility of meningitis, encephalitis, or unexplained acute encephalopathy or delirium;

v. Cluster of Rash illness;

vi. Haemorrhagic illness;

vii. Botulism-like syndrome;

viii. Sepsis or unexplained shock;

ix. Febrile illness(illness with fever, chills or rigors);

x. Non traumatic coma or sudden death ;and

Reports should be submitted to the Woreda Health Office, Regional Health Bureau or Federal Ministry of Health using a Standard Report Form.

10 Pharmacy Services

Table of ContentsPages

Tables

Abbreviations

ADR	Adverse drug reaction
AR	Analytic reagent
DACA	Drug Administration and Control Authority
DSM	Drug supply management
DTC	Drug and Therapeutics Committee
FCC	Food chemical codex
FEFO	First expiry, First out
FMHACA	Food, Medicine and Healthcare Administration Control Authority
LILO	Last in, Last out
PFSA	Pharmaceuticals Fund and Supply Agency
PMP	Patient medication profile card
STGs	Standard treatment guidelines

Section 1 Introduction

Pharmacy service is the last and critical step for client's services in hospitals. Since the ultimate health outcome is determined by appropriate selection, quantification, procurement and rational use of pharmaceuticals, pharmacy services should be designed to provide assurance that quality and safety is maintained at all stages of service provision.

Pharmacy chapter of the previous version of Ethiopian Hospital Reform Implementation Guideline (EHRIG) prepared in 2010, guided hospitals in the implementation of critical operational standards. It helped hospitals in the delivery of quality services and enabled Ministry of Health, Regional Health Bureaus and hospitals to evaluate their performance using predefined indicators. Consequently, commendable achievements have been registered in terms of improving pharmacy service delivery. Currently, many operational standards set in the first version have been achieved by majority of hospitals in the country.

Following the launching of the Health Sector Transformation Plan (HSTP) and its emphasis to increasing equity and quality of health care, hospital pharmacy services are expected to have substantial contributions in realizing this vision by rendering measurable and better quality services in a more responsible and accountable. Moreover, within the last five years, Ethiopian hospitals have been implementing a number of initiatives including APTS and Clinical pharmacy services which were not adequately addressed in the operational standards of the first version. Therefore, it is found necessary to update operational standards and implementation guidance so as to reflect these and other new developments such as chronic diseases management and provision of poison information. In addition, there was a need to develop robust measurement approaches and applicable indicators that are in line with the health sector expectations in the coming five years. Therefore, the standards and guidance set in this chapter are designed to align with and support hospital pharmaceutical services to meet the demands of the health sector transformation plan of the nation.

Section 2 Operational Standards for Pharmacy Services

1. The hospital provides quality pharmaceutical products and effective services in its outpatient, inpatient, and emergency pharmacy service units.
2. The hospital has a functional Drug and Therapeutics Committee (DTC) that develops and implements interventions promoting the rational and cost-effective use of medicines.
3. The hospital has a Medicines Formulary listing all pharmaceuticals prioritized by VEN that can be used in the facility. The Formulary is utilized and updated annually.
4. The hospital ensures execution of good dispensing practices at all dispensing outlets.
5. The hospital implements auditable, transparent and accountable pharmaceutical transactions and services (APTS).
6. The hospital provides clinical pharmacy services at inpatient, outpatient and emergency departments.
7. The hospital provides drug information services to health care providers, patients and the public.

8. The hospital has a functional compounding service.
9. The hospital has efficient and effective pharmaceutical logistics management system that reduces the frequency of stock-outs, wastage, over supply and drug expiry.
10. The hospital has appropriate paper/computer-based inventory management system.
11. The hospital has an established system for regular monitoring medication use and safety.
12. The hospital conducts continuous segregation, documentation and safe disposal of pharmaceutical wastes.

Section 3 Implementation Guidance

3.1 Pharmacy Service Organization and Management

Hospital pharmacy services need be effectively managed so as to provide patient-centered services in a manner consistent with standards outlined in this guideline. To achieve this, the department shall be led by head/ director who is assigned by the hospital management. The department head/director in turn assigns unit coordinators; and team leaders may be formed to execute activities as deemed necessary.

The head/director of pharmacy department performs the following activities (in collaboration with other colleagues): develops implements and monitors annual action plans which are approved by the hospital management to fulfill the mission, vision, goals, and scope of services of the hospital.

- Follows developments and trends in health care and hospital pharmacy practice, and communicates to everyone involved in the provision of pharmacy services
- Makes sure national service standards and guidelines pertaining to pharmacy practices are availed and implemented
- Continuously perform workload analysis and alert the hospital management for possible action
- Participate in hospital committees and meetings representing the pharmacy department including drug and therapeutics committee (DTC)
- Makes sure that new staffs are properly oriented and supervised.
- Designs and implements professional development programs for all staff as appropriate to enhance their knowledge and skills.
- Regularly evaluates the performance of pharmacy staffs and takes measures accordingly.

- Communicates and collaborates with other departments and services throughout the hospital
- Produces and communicates performance reports to the hospital management and relevant government bureaus and agencies

Organization of the pharmacy services should ensure patient's safety, privacy and satisfaction. To achieve this, the following issues should be addressed:

A) Pharmacy Service Organization

The pharmacy services of the hospital should be organized as outpatient pharmacy services unit, inpatient pharmacy services unit, emergency pharmacy services unit, pharmaceutical supply management unit, drug information services unit, and compounding pharmacy services units. Other units shall also be established depending on the hospital complexity and demand. The units should be directed by a registered pharmacist.

B) OPD Pharmacy: can be organized in multiple locations (e.g. ART pharmacy, Adult OPD pharmacy, pediatric OPD pharmacy, chronic care pharmacies, MCH pharmacy etc.) depending on the arrangement of the OPD clinics, geographical proximity and complexity of the hospital so as to improve accessibility and convenience to patients. Patient waiting areas at the OPD pharmacy units should be fitted with appropriate seat and should provide enough safety and protection.

C) Inpatient pharmacy: Depending on patient load, number of beds, and geographical accessibility, there should be adequate number of inpatient dispensaries and specialty pharmacies located near to the major wards. These dispensaries should be led by pharmacists (preferably clinical pharmacists). Inpatient pharmacy services should function under the unit dose dispensing and work for 24 hours and 7 days a week.

D) Emergency pharmacy: Should be organized near emergency department. The dispensing process should be organized such that pharmaceuticals should reach to the patient as fast as possible. Besides the routine prescription based dispensing, emergency crash cart system shall be used to avoid delays in availing pharmaceuticals to emergency patients. Emergency crash cart is a trolley used in hospitals for transportation and dispensing of emergency pharmaceuticals at site of medical/surgical emergency for life support protocols to potentially save patient's life. In crash cart system, the emergency physician, pharmacist, nurse shall determine the list and amount of pharmaceuticals to be included in the crash cart (Annex 1:

Sample Emergency Medicine List). The prefilled crash cart should always be available at bedside. During emergency conditions, the nurse will administer the necessary emergency medicines by taking out of the crash cart. He/she will also be responsible for refilling the cart from the emergency pharmacy using a legal/authorized prescription paper. The nurse hands over the keys and medicines to the nurse on next shift by signing on the bin card.

In situations where the above systems do not work, orders for medicines may be made via telephone or orally. The ordering physician or nurse should submit the prescriptions not later than end of shift and payments should be effected accordingly. Patients served can be paying, free or credit. Emergency pharmacy services should function for 24 hours and 7 days a week.

E) Extemporaneous Compounding: In order to respond to specific patient needs, the hospital pharmacy should have compounding services with separate premises and equipped with the necessary facilities in fulfillment of relevant regulatory requirements.

F) Pharmaceutical supply management: to ensure uninterrupted supply of pharmaceuticals, **t**he hospital pharmacy should have pharmaceutical supply management unit. The unit has separate pharmaceutical stores for medicines and supplies including consumable medical equipment and lab reagents). The overall operation of the unit (selection, quantification, procurement, inventory management, warehousing and distribution) should be coordinated by a dedicated pharmacist and stores should be managed by a separate store managers.

G) Drug Information Services (DIS): The hospital pharmacy should have a drug information service unit to effectively provide evidence based and up-to-date drug information for health care providers and patients.

3.2 Resources needed for pharmacy services

3.2.1 Personnel

In order to deliver efficient and quality pharmaceutical services, the hospital pharmacy should be staffed by appropriate professional mix and number based on the volume of services and work load. Hospital pharmacies should have at least the following positions and professional mix:

- Pharmacy Services Head/Director: *in charge of overall activities of the pharmacy services*

- Pharmacy Unit Coordinators: *coordinates the overall activity in each unit. When necessary there will be team leaders under coordinators.*
- *Pharmacist: in charge of managing dispensing and related functions at the following service areas:*
    - OPD pharmacist: *include evaluators, billers, processors and counselors. They dispense medicines to patients and manage assigned bins in dispensaries. In addition,* chronic care pharmacist *provides pharmaceutical care for patients with chronic diseases.*
    - Inpatient pharmacist: *provides, documents and reports clinical pharmacy service for inpatients. In addition dispenses in ward pharmacies.*
    - Drug Information Pharmacist: *provides up-to-date and unbiased drug information for the healthcare provider and patients*
    - *Compounding pharmacist: undertakes hospital based pharmaceutical preparations*
    - Pharmaceutical supply management pharmacist: *manages the selection, quantification, procurement, storage, inventory and distribution of pharmaceuticals.*
    - Emergency pharmacist: *provides pharmaceutical services in the emergency department.*
- Pharmacy Accountants: *in charge of aggregating and documenting pharmacy transactions and services.*
- Cashiers: *receives cash from clients and deposits received money in banks and delivers financial documents to accountants*
- Porters: *responsible for loading, unloading, delivering and arranging pharmaceuticals under the supervision of the respective unit coordinators of the pharmacy.*
- Cleaners: *responsible to keep service delivery premises clean and tidy all the time.*
- Patient assistant: *responsible to keep order at dispensing outlets so that patients could be served in an orderly and secure manner*

3.2.2 Premises, Equipment and Facilities

The hospital should have sufficient space for the storage, compounding, counseling and dispensing of medicines and for the conduct of related administrative activities. Cashiers should

be located within the dispensing room in a cubicle to ensure patient convenience. The pharmacy accountant offices should be stationed adjacent or near dispensaries. The store should be located in an area that is accessible for trucks to facilitate loading and unloading activities. Separate office with office assistant should also be arranged for the head of pharmacy department.

The hospital should ensure availability of equipment to deliver proper pharmacy services including: shelves, computers, software, printers, UPS, tablet counters, lockable cabinets, refrigerators, thermometers, dispensing counters, calculators, etc. All service areas should be clearly labeled. Access should be controlled to ensure that only authorized personnel enter the premises and that only designated personnel have access to keys.

All pharmacy service units should have a sink with running water and continuous electricity with power backup (connected to hospital generator). Appropriately located toilet should be available. Telephones and internet services should also be available within each service area.

3.3 Drugs and Therapeutics Committee

Each hospital is expected to establish a functional Drug and Therapeutics Committee (DTC) having multidisciplinary representative members to bring together all the relevant professionals to work jointly to improve health-care delivery. The hospital DTC has the responsibility of promoting the safe, rational and cost effective use of pharmaceuticals.

3.3.1 Membership of DTC

During establishing and deciding number of DTC members, the hospital shall take into account that fewer DTC members will enable to reach consensus more easily while more DTC members provides greater expertise, reduce workload for individuals and increase chance of DTC decision implementation. Considering this, Hospital level DTC shall have the following members, as a minimum:

- Chief Clinical Officer, or equivalent (Chairperson)
- Pharmacy head/director (Secretary)
- Head of laboratory department
- Nursing service head

- Head of clinical departments (internal medicine, surgery, pediatrics, gyn-Obs, etc.)
- Head of finance department
- Representative from other services as deemed necessary

Other non-voting, non-executive participant can be invited to attend DTC meetings to discuss specific issues that require their particular expertise. All DTC members, especially the chair and secretary, should be given sufficient time for their DTC functions and this should be included in their job descriptions.

3.3.2 Proceedings of DTC meetings

The DTC should meet at a minimum every two months, or more often as the need arises. Minutes should be kept of all DTC meetings. The agenda, supplementary materials and minutes of the previous meeting should be prepared by the secretary and distributed to members for review in sufficient time before the meeting. These documents should be kept as permanent records of the hospital and should be circulated to hospital management and all hospital departments. All DTC recommendations should be disseminated to the medical staff and other concerned parties and authorities in the hospital. 75% of the membership of the committee will constitute a quorum for any meeting and 50% plus members support will approve decision of any discussed issue. The DTC should cooperate and share experiences with other hospital committees and regional or national DTCs.

Sub-committees of the DTC may be formed to address specific issues as the need arises (for example a policy on the use of antimicrobials etc.).

3.3.3 Roles and responsibilities of the DTC

The DTC should develop TOR detailing the objectives, scope, meeting frequency, membership of DTC, roles and responsibilities of the DTC and each member. To effectively carry out its mandated objectives, the DTC should have the following roles and responsibilities. The DTC is expected to develop and implement annual action plan in line with the roles and responsibilities.

1. The DTC develops and maintains the hospital's specific list of pharmaceuticals.

All relevant departments of the hospital should take part in the selection and prioritization of pharmaceuticals needed by the hospital. Hence clinical, laboratory and imaging departments should take part in the process. The list should be revised at least annually.

2. Preparation of SOPs and guidelines needed to ensure provision of proper pharmacy services.

SOPs should be developed for drug supply management, disposal, drug information services, generic substitution and therapeutic interchange, use of specific medications such as narcotics, chemotherapeutic agents, highly expensive medications, etc.

3. The DTC promotes the adoption and utilization of standard treatment guidelines (STG).

Standard treatment guidelines (STGs) promote the rational use of medicines and provide a benchmark for optimum treatment for the monitoring and audit of drug use. The DTC should promote implementation of national STGs. Specialized hospitals may also develop their own STGs based on availability of required expertise, facility, etc.

4. The DTC establishes mechanisms to identify and address drug use problems

The DTC should establish policy/procedures for identifying and managing drug use problems including, as a minimum:

- Monitoring adverse drug reactions
- Prescription monitoring
- Drug utilization monitoring
- Rational use of antimicrobials

The DTC follows the implementation of these activities by setting up a taskforce composed of relevant departments. Additionally, if resources are available the surveillance of antimicrobial resistance may also be undertaken. When problems are identified, the DTC should devise specific interventions to improve practices. Interventions may be any one or a combination of the following strategies:

- Educational programs such as in-service training,
- Managerial interventions such as use of standard treatment guidelines and formularies, establishing antimicrobial stewardship programs
- Regulatory actions such as controlling medicine promotions, etc.

5. The DTC establishes and oversee the Drug Information Service (DIS)

Each hospital should establish a drug information service that provides information and advice to health professionals, patients and the public.

6. Establishing antimicrobial stewardship program

The DTC through multidisciplinary approach (physicians, pharmacists, nurses, laboratory professionals, infection prevention committee and others as needed) should establish the program to promote rational antimicrobial use and contain AMR.

3.4 Hospital Specific Drug List / Medicines Formulary Manual

All hospitals shall develop hospital specific pharmaceuticals list comprised of medicines, medical supplies, consumable medical equipment and laboratory reagents which are prioritized as vital (V), essential (E) and non-essential (N). This list is developed based on the national formulary. The hospital should use the list for procurement purposes and monitoring use. In addition, specialized hospitals shall have formulary manual for specific medicines used for their specialty services. These hospitals may include pharmaceuticals not included in the national list.

Hospital specific pharmaceuticals list should be prepared by multi-disciplinary team of health professionals drawn from clinical, laboratory, pharmacy, and imaging departments.

The selection of pharmaceuticals for the Hospital specific medicines list/ formulary manual should be based on:

- The local pattern of disease
- The national standard treatment guidelines (STGs)
- The recent national drug list (List of drugs for Ethiopia)
- Health services package given by the hospital
- Availability of expertise in the hospital (specializations)
- Diagnostic capacity of the hospital

During preparation of the drug list /formulary emphasis should be placed on:

- Medicines description using generic names
- Dosage form and strength – in basic units (for example: Amoxicillin 500mg capsule)
- Inclusion of a limited number of drugs to improve drug availability, adherence to treatment, focused prescribing, and to simplify supply management

The pharmaceuticals list should be reviewed and updated at least annually. Procurement, prescribing and use practices should be based on the list. Procurement should be monitored using ABC and VEN analysis methods. The formulary manual/ pharmaceuticals list should be available in clinical departments, the pharmaceuticals store, dispensaries, laboratory, finance, etc. to be used as references.

i. Drug Supply Management

To ensure uninterrupted supply of safe, effective and quality pharmaceuticals, the hospital pharmacy shall have effective and efficient supply chain management system. This needs well organized and functioning Logistics Management Information Systems. In addition, assessing

stock status of the hospital regularly and selecting the right pharmaceuticals in the right quantities and delivering to the right place at the right time for the right cost in the right condition is very critical. Drug supply management at hospitals involves the following basic functions: selection, quantification, procurement, storage, distribution and use.

Selection

Hospital pharmacy should have DTC approved list of medicines, medical supplies, equipment and laboratory reagents categorized into VEN. The pharmaceutical supply management unit in consultation with the various departments in the hospital selects the required medicines for procurement as per the approved list. Whenever there is a need for procuring pharmaceuticals which are not included in the list of the hospital, it is necessary to demonstrate their significance for safe and effective care of individual patients.

Quantification

The pharmaceutical supply management unit should collect relevant data from HMIS, HCMIS, and other relevant sources of information which are essential for forecasting and supply planning. Data to be collected from these sources include:

- Consumption data: quantity of each product dispensed or consumed over the past 12 - month period
- Services data: number of visits, number of services provided, lab tests conducted, treatment episodes, or number of patients on treatment over the past 12-month period
- Morbidity data: incidence and prevalence of specific diseases/health conditions (may be available by population group or through surveillance or research study group, and extrapolated to estimate national-level incidence and prevalence of specific diseases/health conditions)
- Demographic and population data : population numbers and growth, demographic trends
- Information on current program performance, plans, strategies, and priorities, including specific program targets for each year of the quantification.
- The monthly forecasted consumption of each product for each year
- Stock on hand (preferably from physical inventory) data of each product to be quantified (should include losses and adjustments)
- Expiration dates of products in stock, to assess whether they will be used before expiration

- Quantity on order from PFSA and/or other supplier which is not yet received
- Procurement lead time(s) and supplier lead time(s)
- maximum and minimum stock levels of the hospital for each program and each product
- Product information such as whether the selected products are within the Essential pharmaceutical List of the hospital and specific product characteristics (formulations, dosages, number of units per pack size, unit cost, and others)
- Supplier and procurement information regarding their prices, funding source and procurement
- Any information which has direct influence on demand for the hospital services and pharmaceuticals should be collected and considered while building assumptions

Forecasting:

The above collected data may be multiple in types and obtained from different sources, thus, the pharmaceutical supply management unit should organize by type (as consumption, services, morbidity, or demographic data) and assess their quality to determine if they can be used for the quantification. While assessing the data quality, the pharmacist should consider at least the reporting rate of the store and dispensaries, period and frequency of stock outs, timeliness of the data and other factors which affect quality. Then, the necessary adjustment should be made on these unreliable, outdated, or incomplete data.

The pharmaceutical supply management unit assembles a quantification team members composed of clinical, laboratory, nursing and other departments; program managers, procurement specialists, monitoring and evaluation officers, warehouse managers, technical experts in quantification and other as appropriate yearly. This team should define the purpose and scope of the quantification exercise (products, timing, etc.) by considering the desired program performance, policies, and strategic plans of the hospital.

The quantification team also should build and obtain consensus on the forecasting assumptions such as expected uptake in services, compliance with recommended treatment guidelines (i.e. on product characteristics and how products should be prescribed and dispensed), impact of changing program policies and strategies on supply and demand, service capacity, provider behavior, client access to services, seasonality, geographic variations in disease incidence,

prevalence and other factors that might affect demand. Once the team has built consensus on the forecasting assumption, the demand for each product is forecasted using the appropriate method. Consumption and morbidity methods are most commonly used.

Consumption Method: is the most reliable predictor of future pharmaceutical need. Therefore, this method is the preferred option for quantifying the requirements for pharmaceuticals. Since the Consumption Method relies on accurate records of past drug consumption, each hospital should have a reliable system to track drugs from the store to each dispensing unit and to the patient. Consumption at different outlets of the hospital should be recorded, compiled and analyzed for the appropriate supply and use of pharmaceuticals.

Quantification Steps Using Consumption Method:

Step 1: Prepare list of pharmaceuticals to be quantified
Step 2: Determine the period of time to be reviewed for consumption
Step 3: Collect and enter consumption data for each pharmaceutical
Step 4: Calculate average monthly consumption
Step 5: Forecast the quantity of each drug required for the next procurement period
Step 6: Adjust for expected changes in consumption patterns
Step 7: Adjust for safety stock requirements and estimated losses
Step 8: Estimate costs for each pharmaceutical and total costs
Step 9: Compare total costs with budget and make adjustments

Morbidity method: This method uses morbidity data to determine the quantity of pharmaceuticals required. It may be the most appropriate method of quantifying drug requirements when consumption data are incomplete or not available, prescribing patterns are not cost effective, budget is unlikely to be sufficient to meet estimated requirements and health facilities or services are new.

Quantification Steps using Morbidity Method:

Step 1: Specify the list of health problems
Step 2: Establish standard or average treatments for each health problem
Step 3: Establish the list of drugs to be quantified
Step 4: Collect morbidity data for each problem for the review period
Step 5: Estimate the number of treatment episodes for each health problem
Step 6: Forecast the quantity of drugs for each health problem
Step 7: Combine the estimates for each drug from the various health problems into a master procurement list
Step 8: Adjust quantities to cover other health problems
Step 9: Adjust for current stock position and expected losses
Step 10: Estimate costs for each drug and total cost
Step 11: Compare total costs with budget and make adjustments

Ideally, multiple types of data and method of forecast should be used to calculate one or more forecasts. Then these results should be compared and reconciled to arrive at the best forecast consumption figures. To make rational reduction of the forecasted products, different prioritizing mechanisms such as ABC and VEN analysis can be used.

Supply planning:

Based on the above forecast, the pharmaceutical supply management unit of the hospital prepares monthly supply planning regarding the product, supplier (if the product is unavailable from PFSA), budget, amount, procurement method and its lead time, distribution related costs, current stock status, minimum and maximum stock level.

The pharmaceutical supply management unit estimates the total pharmaceuticals required for the specified period based on previous forecast. It also estimates the overall cost by considering updated information on the price of pharmaceuticals, transportation, loading/unloading, and telephone cost and other expenses as needed. It prepares a supply plan that outlines quantities and delivery schedules.

Procurement

The pharmaceutical supply management unit prepares specifications for the selected pharmaceuticals to be procured. Whenever necessary, the respective departments such as laboratory prepare specification in consultation with the unit. Then, it assess the appropriate procurement options and calculate the budget requirements based on the results of quantifications and considering all the necessary expenses.

As per the public procurement policy of the country and the proclamation of pharmaceutical fund and supply agency, the pharmaceutical supply management unit procures the required pharmaceuticals and also asses its performance. All hospitals should procure preferentially through PFSA and the payment can be made on credit/cash based on the signed agreement between PFSA/PFSA hubs and the hospital. During procurement, principles of good pharmaceutical procurement practice and procedures should be followed in all transactions.

Whenever pharmaceuticals are not available at PFSA and an out of stock is secured from the agency, procurement from private suppliers on request for quotation, restricted tendering, open

bidding and direct procurement can be considered as per the conditions set by the public procurement agency of Ethiopia. Additionally, for products that cannot be supplied by PFSA but their timely purchase and delivery are critical for the hospital services, the hospital may consider establishing preferred supplier arrangements as an option each year by signing flexible framework agreement. This process of selecting preferred supplier(s) should be done in open bid and competitive process.

Receiving, Storage and distribution

The procured pharmaceuticals will be received by the Pharmaceutical store manager of the hospital. Before receiving pharmaceuticals, the store manager shall assure their type, quality, usability and quantity. Once confirmed that these pharmaceuticals fulfilled the minimum requirements, store manager should receive using Model 19/health, and give signed and sealed copy of confirmation for the deliverer using appropriate invoices. At the time of delivery, the truck should wait while products are counted and assessed in order to obtain proof of delivery and to take note of any discrepancies with the shipment. If there is any discrepancy, it also takes note of it and informs PFSA or the supplier.

The received pharmaceuticals should be stored at central pharmaceutical store until they are issued to dispensing/service delivery units in the facility.The store manager should properly store pharmaceuticals following the guideline for good storage practice (Annex 2) , undertake visual inspection, identifies and resolves common product quality problems found during a visual inspection.

Up on issuing, the dispensing/service delivery unit should fill *Internal Facility Report and Resupply Form (IFRR) and the store manager should issue using model 22/health.* The distribution of pharmaceuticals should always be based on first expire first out (FEFO) principle. After issuing, the store manager updates *Bin Card* and the *DSM officers* update stock card and files all the above documents. The store manager also determines the available warehouse space before ordering pharmaceuticals for the next procurement period. There should be a system approved by DTC for returning of expired, damaged, leftover and empty packs from the dispensing unit and other areas to the Central store.

The pharmaceutical store manager should establish a resupply schedule for each of the dispensing units, preferably not less than two week to not more than four weeks unless in emergency situations. Each dispensing unit should have a designated date to receive its resupply. On that day, the dispensing unit bin owners should complete their part of the Internal Facility Report Requisition form (IFRR) and compile to send to store. The request should be approved by the head of pharmacy department. The store resupplies to each dispensaries as per the approved request.

Inventory control systems

The purpose of an inventory control system is to maintain appropriate stock levels to meet the needs of patients. A well designed inventory control system informs personnel when and how much of a commodity to order and helps to reduce shortages, oversupply, and expiry of commodities. To do so, both manual and computer based inventory management system can be implemented.

Effective inventory management is underpinned by a Logistics Management Information System (LMIS). The purpose of LMIS is to support the management of all pharmaceuticals by collecting, organizing and reporting information to other levels in the system. Three essential data items that must be captured by the LMIS are stock on hand, consumption data and losses/adjustments.

An effective inventory control system has three key elements: maximum months of stock, the minimum months of stock and the emergency order point. To help maintain adequate levels of stock, these three key elements shall be followed as per the Integrated Pharmaceuticals Logistics System (IPLS) of the country.

Standardized forms for inventory management are described below:

Bin Card: A Bin Card should be prepared for each product in the Pharmaceutical Store. The Bin Card should be kept with each product inside the store. All transactions of the product to or from the store should be recorded on the Bin Card. The Bin Card should also include a column for the loss/adjustment of stock and a column for the stock balance. The stock balance should be updated after each and every transaction or adjustment. (See Annex 3)

Stock Record Card: The Stock Record Card is similar to the Bin Card but is used to track stock based on issuing and receiving orders. It should be kept in the Pharmaceutical Supply Management Unit. The totals on the Stock Record Card should be checked against those on the Bin Card and the results of the physical count. Any discrepancies should be investigated. A combined Bin/Stock Card System provides a measure of internal control that helps to minimize leakages of stock due to theft or loss. Paper based or electronic systems can be used. If an electronic system is installed there should be regular back up of data. (See Annex 4)

Internal Facility Report and Resupply Form (IFRR): The IFRR is used to report the internal transfer of items between the hospital pharmaceutical store and Dispensing Units. The IFRIR also calculates the quantity of each item that should be provided to the Dispensing Unit to reach maximum stock levels. (See Annex 5):

Report and Requisition Form (RRF): The RRF is used to order health commodities from PFSA. Orders should be placed every two months. The quantity to be ordered is calculated as follows: Quantity requested = quantity issued from the store room in the previous reporting period x 2 minus stock on hand. All requisitions/orders shall carry a unique order number so that they can be official documents (replacing MOFED Models 19 to 22). If an order is placed to PFSA by telephone this should immediately be confirmed in writing. (See Annex 6)

Record for Returning Unusable Commodities (RRUC)

The RRUC form is used to track the transfer of supplies back to PFSA. The form should be submitted to PFSA every second month. (See Annex 7):

The recommended inventory control for the new national system is a Forced Ordering Maximum/ Minimum inventory control system. This means that all facilities are required to report on a fixed schedule, and PFSA is expected to supply on a fixed schedule. Facilities will place orders to return their stock levels to the maximum determined for each pharmaceutical. All products are resupplied each time a report and order is completed and sent to PFSA. In emergencies, an emergency order can be placed.

Physical Inventory

A Physical Inventory/Count is an actual count of each pharmaceutical in the stock at any given time. A Physical Inventory should be done regularly in the store and at each dispensing unit, at a minimum of once per year. Bin Cards and Stock Record Cards should be updated at the end of

each physical count. See details on the APTS manual for the activities conducted pre, during and after physical inventory.

Pharmaceutical supply performance monitoring and reporting

The pharmaceutical supply management unit collects, analyze and interpret data on the hospital's pharmaceutical supply management performance and prepare report for the hospital management.

j. Good Dispensing Practice.

Good dispensing practice provided by pharmacy professionals has a great contribution to promote rational drug use and ensuring treatment outcomes and hence saving lives. There are many factors that affect good dispensing practice including dispensing standards, professional's knowledge, skill and attitude, human resource (number and mix), dispensing environment and work flow. Therefore, the dispensing practice and environment should be organized in a manner that reduces waiting time and ensures patient convenience safety, confidentiality and ultimately achieve greater patient satisfaction.

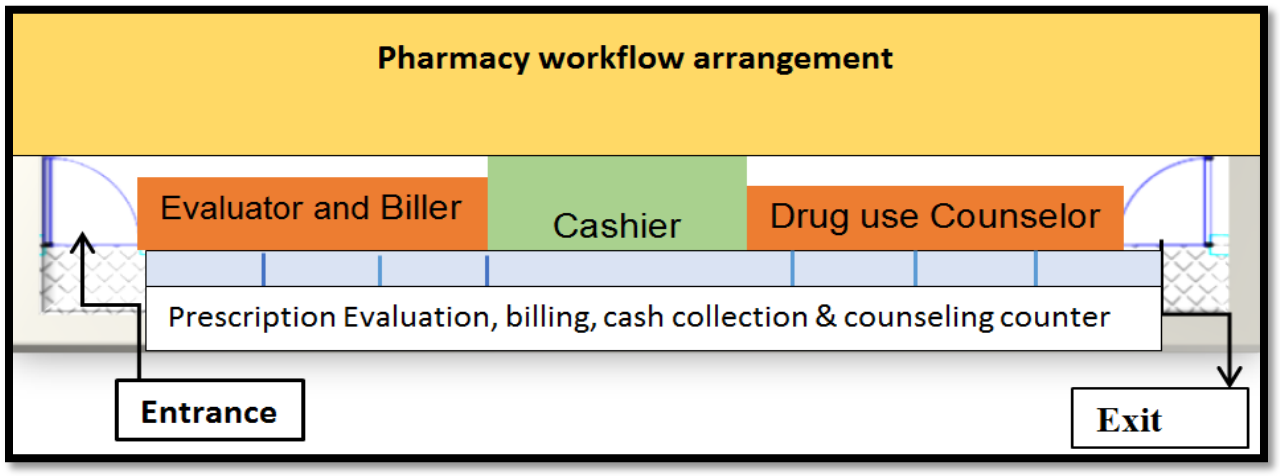


Figure 1: Dispensing Workflow design

The dispensing workflow begins when the pharmacist receives and evaluates (validation, interpretation and checking appropriateness) the prescription. Then the pharmacist should calculate the price of the medicines and inform the same to the patient. He/she then writes the medicines with uniquely identifying codes and retail prices on a sales ticket. Then the sales ticket is given to the cashier. Once payment is effected, the cashier transfers the prescription to the processor/counselor pharmacy professional. He/she selects, counts, assembles and delivers

medicines with the prescription to the counselor pharmacist. Then the counselor pharmacist, packs, labels, checks whether the payment is effected, and gives the medicine with verbal and written counseling to the patient.

Good dispensing practice refers to the delivery of correct medicines to the right patient, in the required dosage and quantities in a package that maintains acceptable potency and quality for the specific duration with clear labelling instruction and drug use counseling. The dispensing process includes evaluation of prescriptions, billing and payment, processing, packaging, labeling, and counseling of patients on appropriate use of medicines. For details, *see the six dispensing steps below*.

1. Receiving, validation, interpretation and checking appropriateness of a prescription
2. Billing and recording transactions
3. Selection, manipulation or compounding of the medicine
4. Packaging and labeling of the medicine
5. Provision of medicines with counseling
6. Filing the prescription and transaction documents

Step 1: Receiving, validation, interpretation and checking appropriateness of a prescription

The pharmacist receives prescriptions in a professional manner and validates for completeness, legality and legibility. All hospitals should use FMHACA's standard prescription paper. He/she should also correctly interpret type of treatment and the prescriber's intentions, abbreviations and brands. Then, the pharmacist confirms the appropriateness of the drug choice, dosage form, strength, dose, frequency, and duration of treatment with the diagnosis. The pharmacist is also required to identify any medicine interactions, contraindications, ADR and treatment duplications giving special attention to pregnant mothers and children.

Orders received by word of mouth or through telephone for emergency cases should later be endorsed by the prescriber and be documented in writing. During receipt of a prescription the pharmacist should identifying the patient, the prescriber and the entity responsible for payment (as applicable). The pharmacist informs the patient about the benefits and implications of any substitution (if any) including branded medicine and therapeutic alternatives. The pharmacist

should also help patients to solve problems with prescriptions that cannot be dispensed due to cost, religion, culture and lifestyle. Any problems identified should be discussed and solution should be solicited in consultation with the prescriber, pharmacists and patient.

Step 2:Billing and recording of transactions

The pharmacist should perform the necessary calculations related to quantity and cost of medicines to be dispensed. Medicines dispensed should be recorded and documented as proof of transaction between the patient and the pharmacy professional. Prescriptions can therefore be traced back if any need arises. Billing and recording of transactions (products and services) should be conducted using serially numbered sales tickets and registers approved by ministry of finance and economic development. For drugs that are not available in the pharmacy, those items should be copied on a blank prescription and signed by the dispenser with a word 'copied' on the prescriber's signature space. On the original prescription, which is retained by the pharmacy, '√' mark should be placed adjacent to those items which have been dispensed and 'X' for items that are not dispensed.

Step 3: Selection, manipulation or compounding of medicines:

Medicines should be selected carefully having prescription at hand. Counting of tablets and capsules should be done on a clean counting tray. The pharmacy professional should also assemble the medicines prescribed. Compounding of extemporaneous preparations should be done in a separate room with the appropriate staff; equipment's and procedure (see compounding section).

Step 4 Packaging and labeling of medicines

The packaging materials for dispensing must maintain quality and potency of medicines. It should protect from moisture, light, and contamination. All medicines to be dispensed should be labeled and the labels should be clear, legible and indelible. Printed labels are advisable for patient safety. The following information must be indicated on the label:

- Patient name
- The generic name of the product or (active ingredients, for compounding) with strength and dosage form

- Dose, route, frequency of administration, duration of treatment and total quantity
- The directions for use and special precautions as applicable
- Expiry date/Beyond use date
- Auxiliary labels such as 'keep out of reach of children'

Step 5 Provision of medicines with counseling to a patients:

All drugs should be dispensed with adequate and appropriate information and counseling. Information must be structured to meet the needs of individual patients. Written information should be provided to supplement verbal communication. Counseling should ensure that the patient has adequate understanding of the instructions and any distinct characteristics or requirements of the medicine. The pharmacist should confirm that patient has understood what has been counseled. Counseling should include:

- Name and description of the medicine used
- Intended use of the medicine and expected effect
- Dose, frequency, route of administration
- Duration of therapy with emphasis given to completing the entire course, e.g. antibiotics,
- Expected time to see a response of the medication and instructions on what to do if the desired effect is not obtained
- The time the drug should be taken in relation to other drugs, food, life style etc,
- Clear instructions on measurement and administration of medicine (liquid, aerosol, topical preparations and suppositories).
- For patients who need special counseling such as those taking suppositories and pessaries, psychiatric patients, non-adherent patients, patients with STI, stigmatized patients etc should be counseled in dedicated counseling rooms.
- Techniques for self-monitoring of medication therapy
- Action to be taken if a dose is missed
- How to prevent, identify, and manage common and severe adverse effects or harmless effects of the medication such as urine discoloration
- Counsel on clinically significant interactions (drug-drug, drug-food, drug-disease)
- Storage instructions including advice regarding keeping medicines out of reach of children,
- Any other information as appropriate

Step 6 Filing the prescription and transaction documents

Each prescription (signed by evaluators and counselors), sales tickets and registers should be filled. All registers and prescriptions, patient and medication related records and information

should be documented and kept in a secure place that is easily accessible only to the authorized personnel. Filing will include:

1. At the close of each day all dispensed prescriptions should be organized into normal or special (e.g. Narcotic drugs) prescriptions and filed.
2. Prescriptions should be filed sequentially by day in a single container/carton for each month. The container should be labeled with the month and year.
3. Containers should be arranged on a monthly basis.
4. Normal prescriptions should be filed securely for two years and special prescriptions for 5 years.
5. Free and credit registers should be filed for two years:

k. Auditable Pharmaceutical Transactions and Services

APTS is a data driven package of interventions designed to establish accountable, transparent and responsible pharmacy practice. It enables health facilities to optimize utilization of medicines budget, improve access to medicines, and decrease wastages. APTS continuously monitors the number, mix & performance of pharmacy workforce. It also improves pharmacy premise design and workflow. Through improving recording and documentation, it generates reliable and consistent information for decision making. As a result, APTS improves overall quality of pharmacy services thereby increasing patient knowledge and satisfaction. Ultimately it contributes to better health outcomes.

APTS has five result areas: efficient budget utilization, transparent and accountable transactions, reliable information, effective workforce development and deployment, and improved customer satisfactions. In order to achieve these results, hospitals are expected implement selected interventions. The following list provides guidance on what needs to be done to achieve each of these results.

Efficient budget utilization

- All hospitals should develop facility specific drug list prioritized by VEN and enforce its use
- Regular ABC value analysis should be conducted and reconciled with VEN categorization and results should be used for guiding decisions during subsequent procurements
- Procurement should be conducted only from hospital medicines list
- Regular stock status and consumption to stock analysis is conducted to identify medicines at risk of expiry

- The hospital should measure wastage rate of medicines on monthly basis. The hospital identifies medicines having near expiry date and take preventive measures to reduce wastage/expiry.
- Establish effective mechanisms for managing sales of medicines and/or increasing revenue by increasing turnover rate, improving availability and reducing misappropriations.

Transparent and accountable transactions

The process of receiving, issuing and dispensing pharmaceuticals in hospitals should be transparent and accountable. Pharmaceuticals are received at the pharmaceuticals store from PFSA and other sources. The pharmaceuticals received by the store are issued to dispending outlets. From the dispensing outlets medicines are dispensed to patient on cash, for free or on credit. All transactions should be conducted using legally approved and pharmaceuticals-specific models, sales tickets, and dispensing registers. The flow of pharmaceuticals from distributers to end users in the hospital shall include:

i. **Receiving**:

All pharmaceuticals (medicines, lab reagents, medical supplies, and equipment) should be received and managed by the hospital Pharmaceuticals Store. Receiving is an important step for proper inventory management. At this step pharmaceuticals must be assessed for quality and quantity and added into the inventory of the store. Hence pharmaceuticals need to be physically inspected before receiving. In physical inspection, the store manager and supply management officer make sure that the products received are as per the list, quantity ordered and expected quality. Once pharmaceuticals are received, inventory records are immediately updated. Pharmaceuticals should be requested using standard format (RRF) from PFSA every two month.

ii. Issuing:

Each dispensing unit should have an agreed list of pharmaceuticals including the maximum (one month) and minimum (two weeks) quantity to be stocked in the dispensing unit. The stock list of each dispensing unit should be approved by pharmacy head. Each dispensing unit should maintain Bin Cards for all pharmaceuticals in the unit with shared responsibility by bin owners.

iii. Dispensary transactions and billing

The provisions of Health Care Finance Reform Legislation enable hospitals to raise and retain revenue. The sale of pharmaceutical products is an important source of hospital income. With the exception of exempted health programs (Immunization, TB, Leprosy, ART and MNCH) pharmaceuticals can be sold at a price that covers the actual cost of the medicine plus a service

charge. Transparent and uniform procedures should be established for setting the sale price of each pharmaceutical and for recording sales.

The retail price of each pharmaceutical should come from the store in issue vouchers (model 22/health). Each dispensing unit should sell pharmaceuticals at the stated price. All pharmaceuticals should be dispensed/sold using a standard sales ticket designed for the purpose and approved by Federal Ministry of Finance and economic development or respective regional finance bureaus.

The pharmacy professional is responsible to record each medicine with full descriptions, uniquely identifying codes, retail prices in the intended sales tickets or free registers. The pharmacist also has to record all service provided, DTP identified by prescription evaluators, and counseling made for clients. The pharmacy accountant summarizes all transactions (financial value, dispensed medicines and services) on daily basis and prepares report on monthly basis as per the APTS guideline. Auditors in collaboration with pharmacy professionals and DTC members should use the document for auditing of the above transactions and improving the service.

Effective workload analysis and manpower deployment

The level of effort for each pharmacy service provision units should be measured and workload should be calculated. Based on the workload analysis result, the hospital's human resource directorate will deploy the required professionals. Key assumptions used for workload analysis:

- For dispensaries 1000 prescription (or 1500 counseling episodes) per pharmacists per month;
- for clinical pharmacy services in wards, 25, 30, 35 beds per pharmacist per day for tertiary, secondary and primary hospitals, respectively;
- for chronic pharmacies, 30 prescriptions per day per pharmacist
- other services units shall deploy staffs as per their workload

Reliable information for decision making

Product, services, financial related performance reports should be produced consistently and communicated timely. The report of the pharmacy should be linked to the serial numbers of financial tools for ease of documentation, reference and validation. Information concerning the financial values includes value of medicines sold on cash, credit and for free.

Service related information includes the total number of patients served per health facility, per dispenser per month segregated by service type which may include services rendered for paying, credit and free patients; outpatients, inpatients and emergency patients; mothers and children; patients with chronic illnesses, patients taking medicines for OIs and so on.

Product related information includes consumption to stock ratio analyses, availability of medicines for top ten diseases, rate of expiry and affordability to take subsequent measures for improving services. Managers and service providers should use this information for decision making.

Improved customer satisfaction

The eventual success of hospital pharmacy service is to meet clients demand and improve their satisfaction through improving availability of medicines with quality pharmaceutical services. Dispensing workflow arrangement and provision of one-stop-shopping service enhances client convenience and reduces waiting time. Regular workload analysis and human resource deployment enables efficient manpower use and reduces patient waiting time. This and the other aforementioned create the environment whereby patients are empowered to properly adhere to prescribed medicine by improving their knowledge and satisfaction.

I. Drug Information Services

Due to the vast number of medicines and the information related to them, it would be very difficult for the health professional to search for all credible sources of information and use it in routine practice. Hence access to authoritative, unbiased and well-referenced drug information is fundamental for the rational and effective use of drugs.

All hospitals should establish drug information center (DIC) and provide the service for health professionals, patients and members of the public. The service generally responds to drug information queries received from the health care team or patients. It also provides education and training to health professionals and/or the public regarding appropriate and safe use of medicines. Regular drug information publications such as drug alerts, newsletters, monographs, therapy updates shall be prepared and distributed to keep the health care team up-to-date. It also notifies availability of pharmaceuticals to the hospital staff weekly. The hospital shall also provide poison information services. The premise of this service can be either within the DIC or independently if resources allow.

The DIC should have a dedicated room that has sufficient space and appropriate furniture and equipment including telephone, computer, printer, filing cabinets and internet access. The DIC should have a current collection of national and international authoritative reference materials such as books, journals, guidelines, formularies, and databases. The DIC should be staffed by appropriately skilled drug information pharmacists that are trained in the provision of drug information.

The operations of the drug information service should be guided by appropriately formulated standard operating procedures (SOPs)/guidelines prepared in line with national documents. The guidelines/SOPs should be established for receiving and answering drug information queries, developing and distributing educational materials and information publications, documentation activities, education and training activities. It needs also to guide monitoring and evaluation activities, participation in other clinical pharmacy services, supporting DTC activities and

conducting research. The center is a resource for the DTC in formulary preparation and revision. The DIC should be open during normal working hours. The services provided by the center should be documented on standard formats prepared for the purpose.

Educating patients on the rational use of medicines through different mechanisms is a crucial activity of the DIC. Patients need be given appropriate information about the medicines they use to achieve optimum adherence that results in better treatment outcomes. Medicine use education is needed so that people have the skills and knowledge to make informed decisions about how to use and store medicines and to understand the role of medicines in health care, with their potential benefits and risks. All relevant staffs of the pharmacy department should be involved in the provision of education for the patient as appropriate. Under the hospital health education program, the unit will have weekly breakdown of topics assigned to responsible pharmacists.

The DIC should develop annual action plan on each activities and should be communicated to the head/director of pharmacy department. All services provided should be documented and performance report should be sent to the head of the pharmacy department regularly.

m. Clinical pharmacy services

Clinical pharmacy services are patient-oriented services developed to promote the rational use of medicines, and more specifically, to maximize therapeutic benefits, minimize risk, and reduce cost. Clinical pharmacists assume responsibility for managing medication therapy in direct patient care settings (inpatient, outpatient and emergency). They assess patients, identify drug therapy needs and problems, propose care plan, recommend choices and hence contribute to therapeutic decisions thereby improving treatment outcomes. The service should be well integrated with all clinical departments.

Clinical pharmacy services are provided based on pharmaceutical care principles. The delivery of pharmaceutical care involves the following logical processes:

- Assess the patient's medicine therapy needs and identify actual and potential drug therapy problems (DTP)
- Develop a care plan to resolve and/or prevent the DTPs
- Implement the care plan
- Evaluate and review the care plan

A) Assess the patient's medicine therapy needs and identify actual and potential drug therapy problems (DTP)

A drug therapy problem is any undesirable event experienced by a patient, which involves or is suspected to involve, medicine therapy, and which interferes with the achievement of the desired goals of therapy. Through assessment the pharmacist establishes the existence of any therapy needs or problems with the drug therapy by interpreting information collected from patient, caregivers, medical records and other healthcare professionals.

B) Develop a care plan to resolve and/or prevent the DTPs

At this step, the pharmacist determines how to manage the patient's medical conditions successfully with pharmacotherapy. The pharmacist establishes goals of therapy by negotiating and agreeing upon endpoints and timeframe for pharmacotherapies. Then appropriate interventions are determined to resolve DTPs, achieve goals, and prevent new problems by considering therapeutic alternatives and selecting patient-specific pharmacotherapy, patient education, and other nondrug interventions. Finally a schedule is established for follow-up evaluation that is clinically appropriate and convenient for the patient. The responsible clinician should be informed and agree on the plan before implementation. In developing the care plan the pharmacist should ensure that the patient is well informed on the process being undertaken.

C) Implement the care plan

The pharmaceutical care plan is implemented with the agreement of the patient and within the context of the overall care of the patient, in cooperation with other members of the health care team.

D) Evaluate and review the care plan

At this step of the pharmaceutical care process the pharmacist evaluates effectiveness and safety of pharmacotherapy and judgment is made as to the clinical status of the condition being managed with pharmacotherapy. Patient compliance is also assessed and new DTPs are identified, if any. Finally next follow-up evaluation is scheduled.

Although all patients benefit, it is necessary to select patients that would benefit most from a pharmaceutical care plan. Hence the following group of patients should be considered:

- Those with multiple conditions/drugs,
- Those whose age, weight or clinical state may affect drug PK and PD
- Patients taking medicines known to have a high risk of toxicity
- Patients taking medicines with a narrow therapeutic index
- Patients taking medicines which may interact
- Patients whose therapy is changed frequently
- Patients who have advanced disease state and/or develop complications
- Patients who failed to respond with initial therapy and continue to deteriorate

During the provision of clinical pharmacy services in the inpatient setup, the following activities need to be performed:

A) Admission medication history taking

Using an In-patient Medication Profile Form (Annex 8), a pharmacist working in a specific ward will be responsible in taking admission medication history either together with the admitting physician or independently. The information collected during the process will be documented in a patient chart so that it will be an input for subsequent decision making for the MDT.

Admission medication history includes but not limited to:

- Pertinent patient demographics
- Past or current medications (Prescription drugs, over the counter drugs, herbal medicines or supplements)
- Any known drug allergy (KDA)
- Adverse drug reactions
- Overall patient adherence to therapy
- Social habits
- Immunization status, for a child and pregnancy status for women

B) Patient monitoring and follow-up

The pharmacist shall be responsible to monitor the outcome of drug therapy from effectiveness and toxicity perspectives for admitted patients based upon relevant laboratory data, radiological findings, physical findings, subjective findings, and document it on pharmaceutical care progress note recording form (Annex 9) in a patient chart. These include:

- Assess whether goals of therapy are achieved or not
- Identify existing or potential adverse reactions and/or treatment failures and recommend management approaches.
- Identify drug incompatibilities and interactions having clinical significance and discuss potential solutions.
- Apply pharmacokinetic dosing principles in dosing of selected drugs such as IV to PO switch

C) Ward rounds, morning sessions and seminars

The pharmacist should actively engage in ward rounds, morning sessions and seminars to contribute to patient care decisions. These activities are performed both as part of the multidisciplinary team (MDT) and as pharmacy only activities. In pharmacy only rounds, the pharmacists are also expected to communicate patients and provide patient medication counseling. They will participate in grand rounds and death reviews, if applicable.

D) Medication reconciliation services

Medication reconciliation is the standardized process of obtaining a patient's best possible history and comparing it to admission, transfer or discharge medication orders to prevent errors of transcription, omission, duplication, interactions and other medicine-related problems. It involves documenting discrepancies identified between the medication history and current medication orders and how these discrepancies were resolved.

All patients should have their medication reconciled as soon as possible after admission or presentation. If medication reconciliation cannot be completed for all patients, prioritize patients most likely to obtain maximum benefit. The service should be documented using Medication reconciliation form (Annex 10).

E) Drug information provision

As part of the routine clinical pharmacy service provision in the inpatient setup, pharmacists should provide verbal and/or written drug information timely. The service is given proactively or when posed by the healthcare team it should be recorded appropriately.

F) Discharge medication counseling

Pharmacists need to involved in discharge planning and provide medications counseling to ensure continuity of care after patients are discharged from hospital. Using in-patient medication profile form, the pharmacistwillrecord discharge medications and counseling provided.

Discharge medication counseling includes but not limited to:

- Informing the name of drugs by showing each (if applicable), dose, frequency and specific time of administration, how to administer if a skill is needed, etc
- Clear benefit and outcome of each drug therapy, expected major side effects from drugs and what to do in their occurrence, pertinent drug-drug and drug-dietary interactions, warnings if any, storage conditions, etc.

G) Documentation of clinical pharmacy services

Clinical pharmacy services should be properly documented on standard formats and relevant reports should be produced. Documentation ensures continuity of care and failure to document clinical pharmacy activities adversely affects the quality of care provided to the patient. The formats include:

- Inpatient Medication Profile Form
- Pharmaceutical Care Progress Recording Form

- Medication Reconciliation Form
- Clinical Pharmacy Intervention Daily Summary Form
- Clinical Pharmacy Intervention Monthly Summary and Reporting Form

The first three forms should be part of the permanent medical record (patient chart) of the patient. All patients with chronic illness and having a follow-up in the hospital should have a patient medication profile form (PMP) for documentation. The PMP should be retained in the pharmacy and updated by the dispensing pharmacist whenever drugs are dispensed to the patient. The PMP can be in hard copy or computerized with hard copy back up and should contain the following information:

a) Name of the health institution,
b) Patient medical record number
c) The full name, sex, age and weight of the patient,
d) The address of the patient and next of kin (if appropriate)
e) Diagnoses and any concomitant diseases
f) History of adverse drug reactions
g) Description of all medicines (prescription and non-prescription) used by the patient
h) Reason for any changes made in the regimen of the patient
i) Name or initial of prescriber and prescription number
j) Dispensing and / or prescription date
k) Appointment / Refill date, and
l) Signature of the dispenser

PMPs should be filed sequentially by medical record number or alphabetically by patient name in chronic care pharmacies. When a patient presents to the pharmacy for a refill, the pharmacist must assess the patient for signs of compliance, effectiveness and safety of therapy. The pharmacist should identify areas for therapeutic modification and should refer to the prescriber when appropriate.

H) Unit dose dispensing in ward pharmacies

Evidences showed that unit dose dispensing system is the most cost effective of all pharmacy distribution system. Through the establishment of ward pharmacies (at medical, pediatrics, emergency, ICU, Gyne-obs, surgery, etc,) a unit dose dispensing system shall be implemented to reduce drug wastage, improve drug availability, efficiently use pharmacy and nursing staffs, and to promote rational drug use.

Unit dose system is characterized by providing 24 hrs.Supplies, in a single dose package, in a ready to administer form and pharmacy specific documentation will be retained. In this system, the pharmacist reviews all medication orders written by the physician (patient chart) brought to the ward pharmacy by the nurse. Then the pharmacy professional prepares the medication

needed for 24-hrs period and make ready to be taken to patient care areas by the nurses. Before administering each dose, the nurse compares the medication label on the drug product with the appropriate medication administration record (MAR). The nurse then administers the dose to the patient and records the fulfillment of the order on the MAR.

I) advanced clinical pharmacy services

Depending on availability of expertise and resources, advanced clinical pharmacy services can be provided particularly in specialized hospitals in collaboration with other departments. These include therapeutic drug monitoring, total parenteral nutrition, oncology, anticoagulation, dialysis, transplantation pharmacy services.

n. Compounding services

A hospital pharmacy should prepare non-sterile preparations such as prescription based ointments and creams and bulk preparations (e.g. hand rubs, hydrogen peroxide, alcohol of different strength, gentian violet,) which are not available commercially but needed for patient care. Small scale manufacturing of sterile preparations such as intravenous fluids and total parental nutrition should also be initiated depending on the need of the hospitals and feasibility. Both sterile and non-sterile preparations in the hospital should fulfill efficacy, safety, and quality parameters. These can be achieved through employing standards, protocols and procedures that guides the preparation of these products. It should also be done by pharmacists.

A committee established by the DTC should develop compounding SOP and secure approval by the DTC. The SOP includes:

- the name, strength and dosage form of the preparation
- all ingredients and the quantities needed
- requirement for premises for the compounding
- equipment needed for preparation, mixing instructions including order of mixing, mixing temperature, duration of mixing
- beyond-use date
- the packaging or container to be used for dispensing
- storage requirements

- labeling instructions
- Quality control procedures (e.g. checking the adequacy of mixing, odor, color, consistency, clarity or pH of preparation as appropriate).

A Compounding Record should be kept of all compounding activities. Further guidance and a sample format for recording of the compounding process and Compounding Prescription Register are presented in appendices 11 and 12, respectively.

o. Medication use and safety monitoring

Medication use play vital role in the health care delivery since it is the core intervention in treating patients. Medication use involves a multistep process including prescribing, transcribing and documenting, dispensing, administering, and monitoring. Through all these process, patients should receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community".

However, safety about medication is a growing concern in today's medical practice because patients are getting harm as a result of medication error, ADR, poor quality products, and system problems. Therefore, it is crucial to ensure patient safety through the implementation of safe medication use practice. Each hospital should implement medication safety programs including ADE monitoring and reporting, performing medication reconciliation activities, identifying high alert medications, and implementing new and existing national standards and systems.

Medication use monitoring

To monitor the use of medications in the hospital, the pharmacy department in collaboration with the DTC should undertake activities periodically using the following methods.

- Monitoring of prescriptions
- Aggregate data methods (ABC, VEN)
- Indicator study methods
- Drug use evaluation methods

A dedicated pharmacist(s), who works in close collaboration with the DTC should be assigned by DIS or pharmacy department, is responsible for continuously performing medication use monitoring; presenting the findings and recommendations to the DTC, following interventions proposed by the DTC and measuring outcomes.

Prescription Monitoring

Prescriptions should be regularly monitored to identify trends and ensure proper prescribing and dispensing practice in the hospital. This activity should be conducted quarterly. The results should be communicated to the DTC for proper implementation and follow-up. Patients and their medicine therapy should be monitored for:

- Legality, legibility and completeness of prescription
- Appropriateness of prescription papers used (NPS)
-
- Appropriateness of the medication for the diagnosis
- Compliance with the hospital formulary or applicable treatment guidelines
- The appropriate dose and route of administration
- The appropriate duration of therapy
- Significant interactions (drug-drug, drug-disease and drug-food)
- Duplication of therapy
-

ABC-VEN Analysis

ABC and VEN analysis are aggregate data methods that are used to identify medication use problems. Each hospital should employ these methods annually to monitor drug use and take interventions accordingly.

ABC analysis is a method for determining and comparing pharmaceutical costs within the formulary system. It follows the Pareto principle "separating the vital few from the trivial many". ABC Analysis can be explained in terms of budget consumed and number of drugs in the budget list as follows:

Category	Percentage of Budget Share	Percentage of Drugs
"A" Drugs	70-80%	10-20%
"B" Drugs	15-20%	10-20%
"C" Drugs	5-10%	60-80%

"A" medicines:

- High percentage of funds spent on large-volume or high-cost items
- Greatest potential for savings
- Greatest potential for identifying expensive medicines that are overused

"B" medicines:

- Moderate cost and moderate number of items; important items

"C" medicines:

- Small amount of funds spent on the majority of the inventory

Steps in performing ABC analysis:

Step 1. List all items purchased and enter the unit cost.

Step 2. Enter consumption quantities for each item.

Step 3. Calculate the value of consumption for each item.

Step 4. Sort the list in descending order by total value.

Step 5. Calculate the percentage of total value represented by each item.

Step 6. Calculate the cumulative percentage of total value for each item.

Step 7. Choose cut-off points for A, B, and C.

Note: The results of ABC should be reconciled with that of VEN.

VEN analysis

If funds are limited, VEN analysis is a method to prioritize for medicine purchase. This analysis is used to identify high priority medicines for procurement and low priority medicines that the DTC should analyze carefully for deletion from the formulary. VEN stands for:

V= Vital: potentially lifesaving and crucial to providing basic health services.

E= Essential: effective against less severe but significant illness. Not vital.

N= No-essential: effective for minor illness but have high cost and low therapeutic advantage.

Steps for conducting a VEN analysis:

- ***Step 1.*** Classify all medicine on the list as V, E, or N
- ***Step 2.*** Analyze the "N" items. Where possible, reduce quantities to purchase or eliminate them.
- ***Step 3.*** Identify and limit therapeutic duplications.
- ***Step 4.*** Reconsider proposed purchase quantities.
- ***Step 5***. Find additional funds if needed or possible.

Indicator study methods:
In Indicator studies a selected indicator is set and performance against this indicator is measured. Indicators can be developed to assess prescribing, patient care or facility practices. Table 1 presents possible indicators that could be used for an Indicator Study.

Table 1 Selected indicator to assess prescribing, patient care and facility practices

Prescribing Indicators	Patient Care Indicators	Facility Indicators
• Average number of medicines per encounter • % of medicines prescribed by generic name • % of encounters with an antibiotic prescribed • % of encounters with an injection prescribed • % of medicines prescribed which are from the essential medicines list or formulary list	• Average consultation time • Average dispensing times • % of medicines actually dispensed • % of medicines that are adequately labeled • % of patients who know how to take their medicines	• Availability of essential medicine list or formulary • Availability of key set of indicator medicines • Availability of standard treatment guideline (STG)

Steps to be taken when conducted an indicator use study include:

Step 1: Determine objectives of study,
Step 2: Define indicators and data collection procedures,
Step 3: Determine study design and sampling methods,
Step 4: Pilot test,
Step 5: Train data collectors,
Step 6: Collect data as per the time line,
Step 7: Compile and analyze data,
Step 8: Prepare report and recommendations based on findings of study,
Step 9: Present report and recommendations to DTC and relevant hospital staff, and implement recommendations arising from study, repeat study to assess impact

Drug Use Evaluation (DUE) methods

'Drug Use Evaluation' studies can be undertaken to measure the use of a specific drug and/or adherence to standard treatment guidelines (STGs). DUE studies are particularly important to investigate:

- Perceived overuse or underuse of medications,
- Problems identified by indicator studies,
- High numbers of ADRs,
- Excessive amounts of non-formulary medicines used,
- Use of high-costs medicines when less expensive alternatives exist, and
- Use of excessive numbers of medicines within a therapeutic category.

Steps to be undertaken in conducting a DUE study include:

Step 1: Define appropriate medicine use (for example medicine use described in national or local STGs)

Step 2: Audit actual prescribing practice against the set criteria

Step 3: Analyze data, prepare report and recommendations based on findings

Step 4: Present report and recommendations to DTC and relevant staff

Step 5: Implement recommendations arising from study, repeat study to assess impact

Problems identified by aggregate methods, Indicator Study and DUE studies may be further investigated using the following qualitative methods: In-depth interviews, Focus Group Discussions, Structured Observations, and Structured Questionnaires.

Medication safety monitoring

Adverse Drug Event Monitoring and Reporting

The side effects or adverse reactions to medicines may range from relatively mild to, in rare cases, serious and life threatening. The detection of side effects and adverse reactions is important on an individual basis to optimize patient care, prevent harm and take any necessary action.

The pharmacy department shall coordinate, in cooperation with medical and nursing staff and possibly other facilities in the region, an adverse drug reaction program. This shall include:

- the identification and immediate reporting of adverse drug reactions to the prescribing physician and pharmacy,
- the investigation and validation of adverse drug reactions including collection of follow-up information, treatment and outcome,
- documentation in the patient's health care record,
- the regular reporting of adverse drug reactions to the Pharmacy and Therapeutics Committee,
- the regular reporting of adverse drug reactions to FMHACA

The pharmacy department shall also maintain current information about adverse drug reactions occurring within the hospital and in literature

All health care professionals should vigilante susceptible individuals for ADR including:

- those with multiple diseases,
- those on multiple drug therapy,
- geriatric or pediatric patients,
- those receiving medicines that are known to be associated with serious adverse effects,
- those receiving drugs with a low therapeutic index or potential for multiple interactions,
- those with organ impairment that may alter drug pharmacokinetics, and
- Those who have had a previous ADR.

A standardized form should be used to record and report ADRs. This should include:

- Patient name, sex, age, medical record number
- Clinical diagnosis
- Current medication
- History of previous ADR if any
- Details of adverse reaction
- Causality assessment
- Recommendations given

A sample is presented in Appendix J.

An ADR focal person should be appointed by the DTC. He/she is responsible to:

- ensure that all health professionals are involved in detecting, assessing, managing and reporting potential ADRs
- ensure that ADR report forms are readily available in all clinical areas and that health professionals are familiar with the form and how to complete it
- receive ADR report forms from clinical staff
- investigate potential ADRs
- analyze ADR data and compile reports
- provide regular reports to the DTC/and Hospital Management on ADRs in the facility
- report all ADRs to the Regulatory Body

The DTC should receive regular reports from the ADR focal person and make any necessary decisions regarding the use of the drug in the facility. Where necessary the hospital formulary should be amended to take account of detected ADRs.

Suspected ADRS should be investigated and managed as follows:

1. Assess suspected ADR with respect to:
   a) ***Patient details***: age, gender, organ function, height, weight; diagnosis and other relevant co-morbidities prior to reaction; previous exposure to suspected drug(s) or related drug(s).
   b) ***Medicine details***: non-prescription drugs, alternative treatments, recently ceased medicines; name, dose, route of administration, manufacturer, batch; date and time commenced; date and time discontinued (if applicable); indication.
   c) ***Comprehensive adverse reaction details***: description of the reaction; time of onset and duration of reaction; complications and sequelae; treatment and outcome of treatment; relevant investigation results or autopsy report.
2. Perform causality assessment to assess likelihood of the drug causing the observed reaction.

A literature review may be undertaken to assess the likelihood that a suspected ADR was caused by a particular drug and/or the advice of other health professionals may be sought.

The ADR should be classified as:

- **Certain**: a clear temporal association is established between medicine administration and the reaction; and/or the results of investigations confirm that there is a relationship between the administration of the medicine and the reaction; and/or the reaction recurs upon re-exposure to the drug; and/or the reaction is commonly known to occur with suspected drug;
- **Probable**: the reaction is known to occur with the suspected drug, and there is a possible temporal association between the reaction and medicine administration; and/or the reaction resolves or improves upon withdrawal of the suspected medicine and other medicine therapy remains unchanged; and/or an uncommon clinical event occurs in the absence of other potentially causative factors;

- **Possible**: an alternative explanation for the reaction exists; and/or more than one medicine is suspected; and/or recovery follows withdrawal of more than one drug; and/or the temporal association between the reaction and administration of the medicine is unclear; or
- **Doubtful**: another cause is more likely to have accounted for the clinical event, e.g. underlying disease.

3. Make recommendations on treatment options, including possible alternative treatments taking into consideration:
    - the likelihood of the suspected drug(s) having caused the reaction,
    - the clinical significance of the reaction,
    - the condition of the patient,
    - the requirement for therapy,
    - the risks and benefits associated with continuing therapy,
    - the relative efficacy and safety of other therapeutic options, and
    - The prophylactic use of other medicines to prevent future adverse reactions.
4. Document the ADR and provide follow up advice:

All ADRs should be clearly highlighted in the patient's case notes. Any patient who has experienced an ADR should receive advice about the drug and reaction, should be advised to avoid the drug in the future and should be given an 'alert card' that states the drug involved and nature of the reaction. He/she should be advised to show this card at any future clinical consultation to prevent the same drug being prescribed again.

The Hospital Pharmacy section should avail reporting form, retain the necessary documentation and also mail the ADR report to regulatory authority FMHACA as per the guidance provided.

5. ADR reporting mechanism
    - The spontaneous reporting

High alert medications

High-alert (or high-hazard) medications are medications that are most likely to cause significant harm to the patient, even when used as intended. The Institute for Safe Medication Practices (ISMP) reports that, although mistakes may not be more common in the use of these medications, when errors occur the impact on the patient can be significant. Some medications that have been considered as high-alert medications include: anticoagulants such as heparin and warfarin, narcotics and opiates, insulins, and sedatives.

General Principles for Reducing Harm from High-Alert Medications

Hospitals and other care settings should employ the following principles of a safe system:

1. Design processes to *prevent* errors and harm.

2. Design methods to *identify* errors and harm when they occur.
3. Design methods to *mitigate* the harm that may result from the error.

1. Methods to *prevent* harm include:

- Develop order sets, preprinted order forms, and clinical pathways or protocols to reflect a standardized approach to treat patients with similar problems, disease states, or needs.
- Minimize variability by standardizing concentrations and dose strengths to the minimal few needed to provide safe care.
- Include reminders and information about appropriate monitoring parameters in the order sets, protocols, and flow sheets.
- Consider protocols for vulnerable populations such as the elderly, pediatric, and obese patients.

2. Methods to *identify* errors and harm include:

- Include reminders and information about appropriate monitoring parameters in the order sets, protocols, and flow sheets.
- Ensure that critical lab information is available to those who need the information and can take action.
- Implement independent double-checks where appropriate.
- Instruct patients on symptoms to monitor and when to contact a health care provider for assistance.

3. Methods to *mitigate* harm include:

- Develop protocols allowing for the administration of reversal agents without having to contact the physician.
- Ensure that antidotes and reversal agents are readily available.
- Have rescue protocols available.

Medication reconciliation

"Medication reconciliation is the process of creating the most accurate list possible of all medications a patient is taking- including drug name, dosage, frequency, and route — and comparing that list against the physician's admission, transfer, and/or discharge orders, with the goal of providing correct medications to the patient at all transition points within the hospital."

Medication Reconciliation is a formal three-step process that includes:

1. Obtaining a complete and accurate list of each patient's current medications (including name, dosage, frequency and route)
2. Comparing the physician's admission, transfer or discharge medication orders to that list

3. Resolving any discrepancies that may exist between the medication list and physician order before an adverse drug event (ADE) can occur

The three steps of the medication reconciliation process can prevent prescribing errors (omissions, wrong dosage or frequency of medications, and duplicate orders). A good strategy to make medication reconciliation process effective is use of a standardized form. The form is often an admission intake, medication, or physician order form. The standardized form's components are medication history or current medication list, the medication orders, the continuation or discontinuation of the medication, and the reason for a medication discontinuation.

The medication reconciliation process should be done in sequence, starting from the admission process, then the transfer process, and then finally the discharge process. Each process relies on the process before it. To ensure that all the patient's home medications are taken into consideration, it is important to check the home list at each step of the process, including admission, transfer and discharge. In addition to transfer and discharge, the list of current medications must be taken into account.

Medication reconciliation is important at transition points. Care transition points include:

1. Admission to the hospital
2. Transfers within the hospital (Intra-hospital transfer)
3. Discharge from the hospital

Medication reconciliation on admission to the hospital involves comparing the home medication list recorded on admission (medication history) to the physician admission medication orders. Any medication that appear on one list and not on the other without documentation as to why they were added or removed are considered unreconciled and need to be clarified with the physician.

Medication reconciliation on Intra-Hospital Transfer involves comparing the medication history and the current medication list (Medication Administration Record-MAR) to the physician transfer medication orders. Any medications that appear on one list and not the other, without documentation as to why they were added or removed, are considered unreconciled and need to be clarified with the physician.

Medication reconciliation on Discharge from the hospital involves comparing the admission medication reconciliation list and the current medication list (Medication Administration Record-

MAR) to the physician discharge medication orders. Any medications that appear on one list and not the other without documentation as to why they were added or removed are considered unreconciled and need to be clarified with the physician.

p. Pharmaceutical Waste Management

Pharmaceutical wastes are all wastes that are generated from the hospital during diagnosis, treatment, immunization, compounding and manufacturing of pharmaceuticals. To protect patients, health workers, supportive staff, community, and environment handling, transportation and disposal of pharmaceutical wastes should be guided by EFMHACA pharmaceutical wastes disposal guideline. Each hospital should establish a pharmaceutical disposal committee comprised of representatives from pharmacy, finance/audit, and sanitation services to ensure the proper disposal of pharmaceutical wastes in accordance with the country laws. The DTC should prepare an SOP which contains the schedule, methods, materials and equipment required for disposal that will be used by the committee. The SOP should also clearly identify the responsible person for the proper management of pharmaceutical waste.

Hospital pharmacy and cleaning staff should be trained/well informed about the potential risks of hazardous pharmaceutical wastes and their management.

The following key activities are performed in pharmaceutical waste management:

- Segregate, count, record and place separately all expired, damaged/unfit for use pharmaceuticals from the usable pharmaceuticals.
- Submit the segregated pharmaceuticals data to the management of the hospital to secure approval for the disposal. It should be accompanied with lists of products to be disposed clearly stating trade name and/or generic name, strength (where applicable), dosage form, pack type and size, quantity, batch number, expiry date, manufacturer, supplier, country of origin, and product price.
- Sort the expired or unfit for use pharmaceuticals based on the pharmaceutical dosage forms. Segregate and chose the appropriate disposal method. For those pharmaceutical wastes that cannot be disposed at hospital level, the hospital shall submit disposal applications to central disposal sites or respective suppliers or licensed disposal firms and shall report/copy to the appropriate organ. In addition, it also request for approval of

disposal of medicines waste, except recyclable materials, cartons, leaflets and labels, by submitting applications to the appropriate organ.

- The hospital should retain signed and stamped certificate of disposal from the authorized body entitled to dispose the drugs. Depending on the risk of medicines waste and complexity of the disposal method, the hospital may use disposal referral system. If that is the case, disposal service applications to licensed disposal firms shall be filed.
- Adjust the inventory management system for each disposed pharmaceuticals.

Disposal of pharmaceuticals should be supported by proper documentation including the price of products for audit and other legal requirements.

General Disposal Methods:

Return to donor or manufacturer: Whenever practical, the possibility of returning unusable drugs for safe disposal by the manufacturer/donor should be explored; particularly for drugs which present disposal problems, such as anti-neoplastic agents.

Waste immobilization/encapsulation: This involves immobilizing pharmaceutical wastes in a solid block within a plastic or steel drum filled to 75% capacity. The remaining space should be filled and sealed with cement or cement/lime mixture and water in proportions 15:15:5 by weight. The sealed drums are then placed at the base of a land fill and are covered with fresh municipal solid waste.

Landfill: Place the expired or 'unfit for use' pharmaceuticals directly into a land disposal and cover it with municipal waste to prevent scavenging. It should be noted that discarding in open, uncontrolled dumps with insufficient isolation from water courses can lead to pollution.

Sewer: Some liquid pharmaceuticals, e.g. syrups and intravenous fluids, can be diluted with water and flushed into the sewers in small quantities over a period of time without serious public health or environmental effect. Fast flowing water courses may likewise be used to flush small quantities of well-diluted liquid pharmaceuticals or antiseptics. In this case, disposal should be done in consultation with the hospital sanitarian/environmental health specialist.

Burning in open containers: Pharmaceuticals should **not** be disposed by burning at low temperature in open containers as toxic pollutants which may be released into the air. Paper and cardboard packaging, if they are not to be recycled, may be burnt but polyvinyl chloride must not be. It is strongly recommended that only very small quantities must be disposed in this way.

Incineration: Expired solid form of pharmaceuticals are burned using a two chamber incinerator that operates at a minimum temperature of 850^0C.

Section 4 Implementation checklist and indicators

4.1 Operational Standards assessment checklist

In order to determine if the Operational Standards for Pharmacy Services have been met by the hospital, the following assessment checklist should be used. It describes operational standards, method of evaluation and rating (met or unmet). This tool can be used by hospital management or by an external body such as RHB or FMOH to measure attainment of each Operational Standard. The tool is presented in Appendix E of *chapter 20 Monitoring and Reporting.*

4.2 Implementation Checklist

The following Table can be used as a tool to record whether the main recommendations outlined above have been implemented by the hospital. This tool is not meant to measure attainment of each Operational Standard, but rather to provide a checklist to record implementation activities.

Table 2: Operational standard assessment checklists for pharmacy services

No	Checklist	Yes	No
1.	A Drug and Therapeutics Committee has been established.		
2.	Terms of reference for the Drug and Therapeutics Committee are defined.		
3.	A Medicines Formulary is created and is shared with staff.		
4.	The hospital develops, utilizes and annually updates a comprehensive list of pharmaceuticals prioritized by VEN.		
5.	Pharmacy services are integrated in the emergency, outpatient and inpatient case teams.		
6.	The hospital implements transparent and accountable pharmaceuticals transactions		
7.	The hospital has a functional compounding service with SOPs to describe different compounding procedures.		
8.	A Drug Information Centre is established to provide drug information to staff and patients alike.		
9.	Procedures are established to receive, investigate adverse drug reactions.		
10.	Procedures are established to monitor prescriptions and drug utilization		
11.	There is a drug procurement policy.		
12.	An inventory management system to manage drug supply and distribution is established.		
13.	There is process to dispose of expired drugs.		
14.	Adequate personnel to provide pharmacy services are in place.		

15.	Facilities and equipment needed to provide pharmacy services are in place.		

4.3 Indicators

In addition, the following indicators may be monitored on a regular basis to assess the effectiveness/outcomes of implementation of the recommendations provided in this chapter.

Table 3 Pharmacy Services Indicators

SN	Indicators	Formula	Frequency	Comment
1.	Percentage availability of key medicines at the hospital	$\frac{\sum Number\ of\ months\ key\ medic}{(Review\ period\ in\ month * numb}$	Quarterly	
2.	Percentage availability of pharmaceuticals selected for top 10 diseases at the hospital[3]	$\frac{\sum Number\ of\ months\ pharmace}{(Review\ period\ in\ month * numb}$	Quarterly	
3.	Pharmaceutical wastage rate	$\frac{Total\ value\ of\ pharmaceutical\ w}{Total\ stock\ available\ for\ s}$	Biannual	
4.	Consumption to Stock Ratio	$\frac{Cost\ of\ despensed\ medicines\ d}{Stock\ avaialble\ for\ sale\ at\ cost\ o}$	Monthly	
5.	Months of stock	Stock on hand divided by Average monthly consumption (AMC)	Two month	
6.	Inventory accuracy rate	$\frac{Total\ \text{number of items where stoc}}{Total\ \text{number of i}}$	Quarterly	
7.	Affordability of dispensed medicines	Average price of medicines dispensed per patients on cash (P) X 30 days. Smallest salary of unskilled government worker (585). (DW)= (Px30)/585; If DW ≤1 = affordable; if DW >1 to DW ≤ 3 = some-how affordable and if DW> 3= un-affordable	Biannual	
8.	Average monthly level of effort (LOE)	$\frac{Total\ \#\ of Patients\ served\ in\ all}{Total\ number\ of\ dispen}$	Monthly	

[3] The number of pharmaceuticals (medicines, reagents and supplies) should not be less than 35.

SN	Indicators	Formula	Frequency	Comment
9.	Proportion of charts that are reviewed by a pharmacist within 24 hours of admission	$\frac{Number\ of\ charts\ reviewed\ by}{Total\ number\ of\ admission\ duri}$	Monthly	
10.	Proportion of charts with completed inpatient medication profile forms	$\frac{\#\ of patient\ charts\ with\ complet}{Total\ number\ of\ admission\ du}$	Quarterly	
11.	Average number of drugs per prescription	$\frac{Total\ number\ of\ drugs\ on\ revie}{(Total\ number\ of\ prescripti}$	Biannual	
12.	Percentage of drugs actually dispensed	$\frac{Total\ number\ of\ drugs\ actu}{(Total\ number\ of\ drugs\ on\ revie}$	Monthly	
13.	Percentage of prescriptions with antibiotics	$\frac{Number\ of\ prescriptions\ with\ a}{Total\ number\ of\ prescriptions\ r}$	Biannual	
14.	Percentage of dispensed medicines adequately labeled	$\frac{\text{Total number of dispensed medici}}{\text{Total number of medicin}}$	Biannual	
15.	Absolute deviation percentage	$\frac{\lvert Forcasted\ quantity - actual\ co}{Actual\ consumptio}$	Annual	
16.	Order fill rate	$\frac{\#\ of\ orders\ filled\ with\ more\ tha}{Total\ orde}$	Annual	
17.	Order Turnaround Time	$\frac{\sum\ \#\ of\ days\ taken\ by\ hospital\ to}{Total\ number\ o}$	Biannual	
18.	Proportion of drug budget out of the total recurrent budget	Proportion of budget allocated to drugs/total recurrent budget * 100	Annual	HMIS
19.	Percentage of prescriptions compounded per month	Total number of compounded preparations per month /total number of compounding preparations requested per month	Quarterly	
20.	Number of drug information queries filled	Total number of drug information queries filled per month	Monthly	
21.	Percentage of patient satisfied with pharmacy services	Survey	Biannual	

SN	Indicators	Formula	Frequency	Comment
22.	Percentage of Patient's with correct knowledge on dosage	Survey	Biannual	

Source Documents

1. American Society of Health System Pharmacists. (2007). *ASHP Statement on the Role of Health-System Pharmacists in Public Health, Medication Therapy and Patient Care: Specific Practice Areas–Statement*. Retrieved from: http://www.ashp.org/DocLibrary/BestPractices/SpecificStPubHlth.aspx.
2. Breland, B.D. (2000). Strategies for the Prevention of Medication Errors. *Hospital Pharmacy Report*; 14(8):56-65.
3. Clark, C. (2002). *Overview of Clinical Pharmacy Services in Northern Ireland*, Department of Health, Social Services and Public Safety.
4. Counselling and Additional Instructions for Dispensed Medicines. (2006). In: Australian Pharmaceutical Formulary and Handbook, 20th Edition, Pharmaceutical Society of Australia, Canberra.
5. Dispensing Practice Guidelines. (2006). In: *Australian Pharmaceutical Formulary and Handbook, 20th Edition*, Canberra: Pharmaceutical Society of Australia.
6. Drug Administration and Control Authority of Ethiopia. (2002). *Standards for the Establishment and Practice of Pharmaceutical Compounding Laboratory*. Addis Ababa, Ethiopia.
7. Drug Administration and Control Authority of Ethiopia. (2005). *Good Dispensing Practice Manual.*
8. Drug Administration and Control Authority of Ethiopia. (2008). *Guidelines for Adverse Drug Reaction (ADR) Monitoring, 2nd Edition*. Addis Ababa: Drug Administration and Control Authority of Ethiopia.
9. Deepak, V. and Bradley C. (2006). Development of a Pharmacy Care Plan and Patient Problem Solving. In: Remington, the Science and Practice of Pharmacy, 21st Edition, Lippincott Williams & Wilkins.
10. Environmental Pollution Control Proclamation No. 300/2002, Ethiopia, 2002.
11. Ethiopian Democratic Republic Federal Ministry of Health and Drug Administration and Control Authority of Ethiopia in Collaboration with Management Sciences for Health/Strengthening Pharmaceutical Systems. (2008). *Standard Operating Procedures Manual for Patient Focused Pharmacy Services (Draft).*
12. Good Compounding Practice (1075). (2009). In: The United States Pharmacopoeia 32, The USP Conventions Inc., Rockville, MD, USP 2009.
13. Hutchinson, S.L. and Graham, D. (1998). Specialized Services from a Hospital Pharmacy, In Winfield, A.J. and. Richard, R.M.E (Eds.), *Pharmaceutical Practice*, 2nd Edition. Churchill Livingstone.

14. John Snow, Inc./DELIVER in collaboration with the World Health Organization. (2003). *Guidelines for the Storage of Essential Medicines and Other Health Commodities*, Arlington, VA: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

15. Joint Formulary Committee. (2008).*British National Formulary*. [No.. 55] ed. London: British Medical Association and Royal Pharmaceutical Society of Great Britain.

16. Moody M.M. (1998). Dispensing Techniques (Compounding and Good Practice). In: Winfield, A.J. and. Richard, R.M.E (Eds.), *Pharmaceutical Practice, 2nd Edition*, Churchill Livingstone.

17. Management Sciences for Health. (1996). *Manual for the Development and Maintenance of Hospital Drug Formularies, Management Sciences for Health, Rational Pharmaceutical Management Project, Russia Rational Pharmaceutical Management Project*. Retrieved from: http://www.msh.org.

18. Management Sciences for Health in Collaboration with World Health Organization. (1997). *Managing Drug Supply, the Selection, Procurement, Distribution and Use of Pharmaceuticals*. Action Program on Essential Drugs, Kumarian Press.

19. Model Standards for Self Audit in Community Pharmacy in England. (1994). The Dispensing Process, Department of Pharmacy Policy and Practice, Keele University.

20. Moody M.M. (1998). Health Promotion and Health Education, In Winfield, A.J. and. Richard, R.M.E (Eds.), *Pharmaceutical Practice*, 2nd Edition. Churchill Livingstone.

21. Nicholas G, Popovich. Fundamentals of Pharmacy Practice In Gennaro, A.R. (Ed), *Remington, The Science and Practice of Pharmacy, 21st Edition*, Lippincott Williams & Wilkins, 2006.

22. Pharmaceutical Compounding – Non Sterile Preparations 795. (2009). In The United States Pharmacopoeia 32, The USP Conventions Inc. Rockville, MD, USP 2009.

23. Proclamation No.649/2009: *A Proclamation to provide for the Establishment of a Drug Fund and the Pharmaceutical Supply Agency.* (2007, 04 September) Addis Ababa: Federal Negarit Gazetta.

24. Robert, L.T. and Richard, J.B., Specialization in Pharmacy Practice, in: Remington, *The Science and Practice of Pharmacy*, 21st Edition, Lippincott Williams & Wilkins, 2006.

25. The Society of Hospital Pharmacists of Australia. (2005). Standards of Practice for Clinical Pharmacy; *J Pharm Pract Res*; 35(2):122-46.

26. The Society of Hospital Pharmacists of Australia. (1994). Practice Guidelines for Outpatient Services, *Aust J Hosp Phar*; 24(5):421-3.

27. The Society of Hospital Pharmacists of Australia. (2005). Standards of Practice for the Safe Handling of Cytotoxic Drugs in Pharmacy Departments, *J Pharm Pract Res*; 35(1):44-52.

28. South African Pharmacy Council. (2004). Good Pharmacy Practice in South Africa. *Good Pharmacy Practice Manual*, 2nd Edition.

29. Stability Considerations in Dispensing Practice. 1191. (2009). In: *The United States Pharmacopoeia (USP)*, 32, the USP Conventions Inc. Rockville, MD, USP 2009.

30. Walker, R. (2000), Pharmaceutical public health: the end of pharmaceutical care? *The Pharmaceutical Journal*, 264 (7085):340-341.

31. World Health Organization, Essential Drugs and Medicines Policy Department. (2003). *Drug and Therapeutics Committees, A practical guide*, WHO/EDM/PAR/2004.1, CH 1211 Geneva 27. Retrieved from: http://www.who.int/Medicines.

32. World Health Organization, Department of Medicines Policy and Standards. (2006). *Developing Pharmacy Practice, A Focus on Patient Care Hand Book*. Geneva, Switzerland: World Health Organization. In collaboration with International Pharmaceutical Federation, The Hague, The Netherlands.

33. World Health Organization. (1996). *Good Pharmacy Practice (GPP) in Community and Hospital Pharmacy Settings*. Geneva: World Health Organization.

34. World Health Organization. (1999). *Guidelines for Safe Disposal of Unwanted Pharmaceuticals in and after Emergencies.* WHO/HTP/EDM/99.2.

35. World Health Organization. (2000). *Guideline for Safety monitoring of medicinal products, The UPPSALA monitoring center*. Geneva: World Health Organization.

Appendices

Appendix 1 Sample List of Emergency Medicines

SN	Name of the Drug	Dosage Form and Strength
1	Acetylcystene	Powder
2	Activated Charcoal	Powder 25G, 50G, Suspension
3	Adrenaline(Epinephrine)	Injection, 1mg/ml, 1:1000 solution
4	Acetazolamide	Tablet, 250mg
5	Aminophylline	Injection, 25mg/ml in 10-ml ampoule
6	Atenolol	Injection, 5mg /ml
7	Atropine Sulphate	Injection, 0.6mg in 1-ml ampoule
8	Adenosine	Injection, 3mg/ml
9	BAL (Dimercaprol)	Injection, 50mg/ml
10	Calcium Gluconate	Injection, 10%
11	Chlorpromazine	Injection, 25mg/ml in 2-ml vial
12	Dexamethasone	Injection, 4mg/ml in 2ml ampoule
13	Digoxin	Injection, 0.25mg/ml in 2ml ampoule
14	Diazepam	Injection, 5mg/ml in 2ml vial
15	Dobutamine	Injection, 12.5mg/ml in 20ml ampoule
16	Dopamine	Injection, 40mg/ml in 5ml ampoule
17	Frusemide	Injection, 10mg/ml in 2ml ampoule
18	Glyceryl Trinitrate	Sublingual tablet, 0.5mg
19	Heparin	Injection, 5000 Units/vial
20	Haloperidol	Injection, 5mg/ml in 1ml ampoule
21	Hysocine n-butylbromide	Injection, 20mg/ml in 1ml ampoule
22	Hydrocortisone	Powder for Injection, 100mg
23	Insulin (Soluble)	Injection,40IU/ml in 10ml vial
24	Ipecauanha	Syrup
25	Isoprenaline	Injection, 20mcg/ml
26	Isosorbide dinitrate	Subligual tablet, 5mg
27	Intravenous fluid (IV fluids)	5%Dextrose, 540ml
		10%Dextrose, 540ml
		5%Dextrose with sodium chloride, 540ml
		Ringer lactate, 540ml
		0.9% Sodium Chloride, 540ml
28	Ipratopium Bromide	Aerosol Inhalation
29	Ketamine	Injection, 10mg/ml, 50mg/ml in 10 ml vial
30	Lignocaine	Injection, 1%, 25 in 30 ml vial; Gel 2%; Topical solution, 4%
31	Lignocaine(Xylocard)	Injection, 21.3mg/ml in 50ml vial
32	Mannitol	Injection, 20% in 300ml vial
33	Magnesium Sulphate	Injection, 50%, 10ml (5gm ampoule)
34	Methyl-ergometrine	Injection 0.2mg/ml in 1 ml ampoule
35	Metoclopramide	Injection, 5mg/ml in 2ml ampoule
36	Morphine	Injection, 10mg/ml in 2-ml ampoule

SN	Name of the Drug	Dosage Form and Strength
37	Naloxone	Injection, 0.4mg/ml in 1 ml ampoule
38	Noradernaline(norepinephrine)	Injection,1mg/ml in 1 ml ampoule
39	Nitroprusside	Injection - 50mg
40	Nifedipine	Capsule, 5mg
41	Oxygen	
42	Oxytocin	Injection, 5units /ml in 1ml ampoule
43	Paracetamol	Injection, 150mg/ml in 2ml ampoule
44	Pethidine	Injection, 50mg/ml in 1 and 2 ml ampoule
45	Pheniramine maleate	Injection, 22.75 mg/ml in 2ml ampoule
46	Phenobarbitone	Injection, 200mg/ml in 1ml ampoule
47	Phenytoin sodium	Injection, 50mg/ml in 5 ml ampoule
48	Pilocarpine	Eye drop, 2%, 4%
49	Polygeline with Electrolytes	IV solution, 3.5%
50	Polyvenum Antisnake venom	Injection
51	Propanolol	Injection, 1 mg / ml
52	Phytomenadione (Vit K)	Injection 10mg/ml
53	Potassium Chloride	Injection,150mg/ml in 10ml ampoule
54	Pralidoxime (PAM)	Injection,25mg/ml in 20ml ampoule
55	Protamine Sulphate	Injection, 10mg/ml in 10ml ampoule
56	Quinine Sulphate	Tablet, 200mg
57	Ranitidine	Injection, 25mg/ml in 2ml ampoule
58	Salbutamol	Respiratory solution, 5mg/ml in 15ml vial
59	Silver sulphadiazine	cream 1%
60	Sodium bi-carbonate	Injection, 75mg/ml in 10ml ampoule
61	Sodium Stibogluconate	Injection, 100mg/ml
62	Streptokinase	Injection,1.5million IU
63	Tetanus Toxoide	Injection, 0.5ml
64	Thiopentone	Injection,0.5gm 1gm per ampoule
65	Verapamil (Isoptin)	Injection, 2.5mg/ml in 2ml ampoule
66	Suxamethonium (Succinylcholine chloride)	Injection 50mg/ml - 2ml ampoule or 10ml vial
67	Ephidrine	Injection 30mg/ml - 1ml ampoule
68	Hydrallazine	Injection, 20mg/ml – vial
69	Paraldehyde	injection, 5ml
70	25% Dextrose	Injection
71	Amiodarone	Injection 50mg/ml, tablet 100mg
72	Ipratopium Bromide (Respiratory Solution)	Nebulizer

Appendix 2: Pharmaceutical storage guideline

Activities		Justification
1.	Store pharmaceuticals in a dry, well-lit, well- ventilated storeroom - away from direct sunlight. Temperatures in the storeroom should not exceed 25^{o}C.	Extreme heat and exposure to direct sunlight can degrade pharmaceuticals and dramatically shorten shelf life. Direct sunlight raises the temperature of the product and can reduce its shelf life or may damage the product by other mechanisms.
2.	Clean and disinfect the storeroom regularly. Keep food and drink out of the storeroom.	Pests are less attracted to the storeroom if it is regularly cleaned and disinfected. The outside of the store should also be kept clean, and any garbage should be stored in covered containers. Water should not be allowed to stagnate near the building. Would should be varnished or painted to discourage pests. If possible, a regular schedule for extermination will also help eliminate pests.
3.	Protect storeroom from water and moisture.	Moisture can destroy both supplies and their packaging. If the packaging is damaged, the product is still unacceptable to the patient even when the pharmaceutical is not damaged.
4.	Keep fire safety equipment available, accessible, and functional, and train employees to use it.	Stopping a fire before it spreads can save expensive supplies and the storage facility. The right equipment should be available; water is able to put out paper fires, but is ineffective on electrical and chemical fires. Place well-maintained fire extinguishers at suitable positions in the storeroom. If a fire extinguisher is not available, keep sand or soil in a bucket nearby.
5.	Store latex products away from electric motors and fluorescent lights.	Latex products can be damaged if they are directly exposed to fluorescent lights and electric motors. Electric motors and fluorescent lights create the chemical ozone which can rapidly deteriorate latex products. Keep latex products in paper boxes and cartons.
6.	Maintain cold storage, including a cold chain, as required.	Cold storage (2 to 8 degrees Celsius or 36 to 46 degrees Fahrenheit) is essential for maintaining the shelf life of certain pharmaceuticals. These items are irrevocably damaged if the cold chain is broken. If electricity is unreliable, the use of cylindered gas or kerosene-powered refrigeration is recommended. Many drugs require storage below 25 ^{o}C. There may also be products that should be stored at a temperature below 0^{o}C and hence the required storage condition should be maintained for these products.

7.	Limit storage area access to authorized personnel. Drugs which need an access-controlled environment such as narcotics, psychotropic, etc should be stored under lock and key separate from the rest of stock preferably a locked wire cage within the storage facility or a lockable cabinet.	To prevent theft and pilferage, lock the storeroom and/or limit access to personnel other than authorized staff, and track the movement of pharmaceuticals.
8.	Stack cartons at least 10 cm off the floor, 30 cm away from the wall and other stacks, and no more than 2.5m high.	Pallets keep the products off the floor so they are less susceptible to pests, water and dirt damage. Stack pallets 30 cm away from the walls and each other to promote air circulation and to ease movement of stock, cleaning and inspection. Do not stack cartons more than 2.5m as the weight of the products may crush the cartons at the bottom. This will reduce potential injury to warehouse personnel. If cartons are particularly heavy, stack cartons less than 2.5m. Where feasible, strong well-organized shelving is preferred.
9.	Store medical supplies away from insecticides, chemicals, old files, office supplies and other materials.	Exposure to insecticides and other chemicals may affect the shelf life of pharmaceuticals. Old files and office supplies may get in the way and reduce space for medical supplies or make them less accessible. “De-junking” the storeroom regularly makes more space for storage.
10.	Store flammable products separately from other products. Take appropriate safety precautions. Storage areas and cabinets should be clearly marked to indicate that they contain highly flammable liquids and should display the international hazard symbol. Corrosive or oxidant products, laboratory chemicals and reagents should be stored away from flammables, ideally in a separate steel cabinet to prevent leakage.	Some medical procedures use flammable products, such as alcohol, cylindered gas, or mineral spirits. Such products should be stored in the coolest possible place, away from electrical appliances and other products and near a fire extinguisher.
11.	Store pharmaceuticals to facilitate FEFO procedures and stock management.	FEFO (First Expiry, First Out) is a method of managing drugs in a storage facility where the drugs are managed by their expiry date. Drugs that will expire first are issued first, regardless of when they were received at the health facility.

12.	Store drugs in their original shipping cartons. Arrange cartons with arrows pointing up, and with identification labels, expiry dates, and manufacturing dates clearly visible.	Drugs should not be opened to repackage them. Store supplies in their original shipping cartons. Items should be stored according to manufacturer's instructions on the cartons; this includes paying attention to the direction of the arrows. Identification labels make it easier to follow FEFO, and make it easier to select the right product.
13.	Separate unusable pharmaceuticals from usable pharmaceuticals and dispose of damaged or expired products without delay.	Do not dispense expired drugs to the patients. Designate a separate part of the storeroom for damaged and expired goods.
	Pharmaceuticals Requiring Cold Storage: Thermo-labile medicines must be kept in a refrigerator. The refrigerator should only be used for storing pharmaceuticals. The refrigerator should not be overloaded and stock should be kept in an orderly manner. The door of the refrigerator should close tightly. Uninterrupted power supply must be ensured. The temperature of the refrigerator should be maintained between 2^{o}C and 8^{o}C. The temperature of the refrigerator must be monitored and charted twice daily. A WHO approved dial thermometer or alcohol or mercury thermometer should be used. The thermometer must be hung from the middle shelf of the refrigerator. If the power is off for any length of time, the refrigerator should not be opened until the power supply is restored. The cold chain must be maintained when the refrigerator is cleaned. Cooler boxes should be used to maintain the cold chain. The following procedures should be followed when the refrigerator is cleaned: The inside of the refrigerator should be cleaned with an appropriate cleansing solution and wiped dry The door gasket should be cleaned, especially along the bottom edge on upright units. The freezing compartment should be defrosted if there is more than 10 mm of ice on the evaporator. The condenser coil on the back of the refrigerator should be cleaned and dust removed from the compressor.	

Appendix 3 Bin Card

Hospital Name: _____

Product Name, Strength and Dosage Form: _____

Unit of Issue: _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued t	Quantity				Batch No.	Expiry Date	Remark
			Received	Issued	Loss/Adj	Balance			

Appendix 4 Stock Record Card

Hospital Name: _____

Product Name, Strength and Dosage Form: _____

Unit of Issue: _____

Maximum Stock Level: _____ Emergency Order Point: _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued t	Quantity				Unit Price		Expiry Date	Remark
			Received	Issued	Loss/Adj	Balance	Birr	Cent		

Appendix 5 Internal Facility Report and Resupply Form (IFRR)

Appendix M Internal Facility Report, Issue and Receipt Voucher (IFRIR)

Name of Dispensing Unit: _____ Reporting Period From: _____ To: _____

Maximum Level (ML): _____

		COMPLETED BY UNIT				COMPLETED BY STORE					
Ser. No.	Item	Stock on Hand at Start of Period	Stock on Hand at End of Period	Expired/ Damaged/ Lost	Qty. Trans.	Estimated Consumption E = A-B-C+/- D	Average Consumption	Maximum Quantity G = F * ML	Quantity Needed to Reach Max. H = G – B	Quantity Supplied	Item Price
		A	B	C	D	E	F	G	H	I	J
1											
2											
3											
4											
5											
6											

Reported by:	Issued by:	Approved by:	Received by:
Signature:	Signature:	Signature:	Signature:
Date:	Date:	Date:	Date:

Appendix 6 Report and Requisition Form (RRF)

Appendix N Facility Combined Report and Requisition Form (FCRRF)

Health Facility: _____ Region: _____ Zone: _____ Woreda: _____

Reporting Period: From: _____ (month/day/year) To: _____ (month/day/year)

SN	Product Code	Product Description	Unit of Issue	Report Part						Requisition Part	
				Beginning Balance in Store	Quantity Received	Losses/ Adjustments	Ending Balance in Store	Days Out of Stock	Calculated Consumption	Maximum Stock Quantity	Quantity Ordered
				A	B	C	D	E	F= A + B +/- C – D	G = F * 2	H= G - D
1											
2											
3											
4											
5											
6											
7											
8											
9											

Remarks:

Completed by: _____ Signature: _____ Date: _____

Approved by: _____ Signature: _____ Date: _____

Appendix 7 Record for Returning Unusable Commodities (RRUC)

Date: _____

To:

_____

(Name of Health Centre or PFSA Hub)

Facility returning commodities: _____

Region: _____ **Woreda**: _____ **Kebele**: _____

Item Description	Unit	Quantity Returned	Reason for Return/Non-Use

Sending Certification:

Completed by: _____ **Signature:** _____ **Date:** _____

Remarks:

Carrier Certification:

Carried by: _____ **Signature:** _____ **Date:** _____

Remarks:

Receiving Facility Certification:

Received by: _____ **Signature:** _____ **Date:** _____

Remarks:

Appendix 8 In-patient Medication Profile Form

(Follow the instructions when completing this form)

Name of Hospital: _____ Region: _____

1. Patient Information

Name:

_____

Card #: _____ Sex: _____ Age: _____

Wt.: _____ Height: _____ BSA: _____

Pregnancy status: _____

Date of admission: _____

Ward: _____ Bed No: _____

Diagnosis:

2. Past Medical and Medication History

Medical history:

Medication history and adherence:

ADRs and/or Allergies:

Immunization Status:

3. **Current Medications**

Indication	**Drug & Dosage Regimen** (Name, Dosage Form, Dose, Frequency)	**Start Date**	**Stop Date**

4. **Pharmacist's Assessment and Care Plan:**

5. **Recommendations/Interventions:**

6. **Discharge Medication and Counseling:**

Appendix 9 Pharmaceutical Care Progress Note Recording Form

Form 2: Pharmaceutical Care Progress Note Recording Sheet

(Follow the instructions when completing this form)

Patient Name: _____ Card No. _____

Appendix 10 Medication Reconciliation Form

(Follow the instructions when completing this form**)**

Hospital _____Region_____
Patient name: _____ Age _____ Sex _____Weight _____

Source(s) of medication list _____

Allergic: _____

Medication information source	**Regimen (Drug name, Dose, Frequency, Duration)**	**Reconciliation**					**Adjustments/ Changes made**	
		Plan on admission		Plan on transfer		Plan On Discharge		
		C	DC	C	DC	C	DC	
Pre-admission Medication								
Current Medication								

C – Continue, DC - Discontinue

Recorded by: Name _____ Signature _____ Date _____

Appendix 11 Compounding Process Description

A. General Procedures for Compounding

1. Receive, validate and interpret the prescription as per the Standard Operating Procedures (SOP) for dispensing
2. Ensure that the compounding area, equipments and containers are ready for the process and don't compromise the quality of the final product
3. Calculate the quantity of each ingredient accurately
4. Weigh and measure the ingredients necessary for compounding of the product as per the procedures for weighing and measuring, respectively
5. Compound the preparation following the appropriate procedure
6. Transfer to the final container, if it is not prepared in the final container, and make up to volume, if necessary
7. Close the container and shake well as appropriate
8. Assign beyond-use date for the preparation
9. Prepare and attach a proper label on the product container
10. Clean all the equipments used for the compounding process and return to their original place
11. Clean the working table
12. Record the compounding process on the Compounding Sheet
13. Dispense the product to the patient with proper counselling
14. Record the prescription on the Compounding Prescription Registration Book

B. Procedures for Weighing

1. Select a balance with appropriate capacity and sensitivity.
2. If weighing a solid material which requires being size reduced (ground) or sieved, always ensure that this is carried out before weighing.
3. Ensure that the balance is clean, dry and working properly
4. Put the balance on a level, non-vibrating and clean table
5. Adjust the balance, put the container for the material to be weighed and weigh it (to deduct from the final total weight) or use auto-zero to cancel its weight. Grease-proof papers should be used for weighing of semisolids.
6. Read carefully the label of the material to be weighed (check name, strength, expiry date)
7. Check the appearance and any sign of stability problems.
8. Add the material to be weighed on to the container using spatula until the correct weight is obtained, close the container and return to the original place
9. Carefully remove the weighed material and transfer to the suitable container
10. Clean the balance and its accessories.
11. Return the balance and its accessories to the original place
12. Clean the working table

Procedures for Measuring Liquids

1. Make sure the availability of appropriate graduated measure (cylindrical graduate, conical graduate, pipette, syringe, and dropper) depending on the viscosity and quantity of the liquid to be weighed.
2. Select a clean and dry graduated measure of appropriate size.
3. Read the label of the liquid carefully (check name, strength, expiry date)
4. Check the appearance and any sign of stability problems.
5. Pour the liquid into the measure until the desired volume is obtained.
6. In case of measuring more than one liquid, hold the cap of the container in your hand, preferably between the fourth finger and the palm of the hand, so that the possibility of exchange of closures ending up with cross-contamination is minimized.
7. Transfer the liquid from the measure.
8. Allow to drain for sufficient time. Viscous liquids need more time as compared to aqueous, alcoholic and hydroalcholic liquids which can drain within 30 seconds.
9. Clean the measure and replace to its original place.
10. Clean the working table.

C. Procedures for Measuring Liquids

11. Make sure the availability of appropriate graduated measure (cylindrical graduate, conical graduate, pipette, syringe, and dropper) depending on the viscosity and quantity of the liquid to be weighed.
12. Select a clean and dry graduated measure of appropriate size.
13. Read the label of the liquid carefully (check name, strength, expiry date)
14. Check the appearance and any sign of stability problems.
15. Pour the liquid into the measure until the desired volume is obtained.
16. In case of measuring more than one liquid, hold the cap of the container in your hand, preferably between the fourth finger and the palm of the hand, so that the possibility of exchange of closures ending up with cross-contamination is minimized.
17. Transfer the liquid from the measure.
18. Allow to drain for sufficient time. Viscous liquids need more time as compared to aqueous, alcoholic and hydroalcholic liquids which can drain within 30 seconds.
19. Clean the measure and replace to its original place.
20. Clean the working table.

Stability and Beyond-use Dating

a. Compounding pharmacists should avoid ingredients and conditions that could result in excessive physical deterioration or chemical decomposition of drug preparations, especially when compounding.
b. The beyond-use date is the date after which a compounded preparation is not to be used and is determined from the date the preparation is compounded. Because compounded preparations are intended for administration immediately or following short-term storage, their beyond-use dates is assigned based on criteria different from those applied to assigning expiration dates to manufactured drug products.
c. Compounders should consult and apply drug-specific and general stability documentation and literature when available, and should consider the nature of the drug and its degradation mechanism, the container in which it is packaged, the expected storage conditions, and the intended duration of therapy when assigning a beyond-use date.
d. At all steps in the compounding, dispensing, and storage process, the compounder should observe the compounded drug preparation for signs of instability. However, excessive chemical degradation and other drug concentration loss due to reactions may be invisible more often than they are visible.

e. In the absence of stability information that is applicable to a specific drug and preparation, the following maximum beyond-use dates are recommended for non-sterile compounded drug preparations that are packaged in tight, light-resistant containers and stored at controlled room temperature unless otherwise indicated.

For Non-aqueous Liquids and Solid Formulations:

Where the Manufactured Drug Product is the Source of Active Ingredient — The beyond-use date is not later than 25% of the time remaining until the product's expiration date or 6 months, whichever is earlier.

Where a USP or BP Substance is the Source of Active Ingredient — The beyond-use date is not later than 6 months.

For Water-Containing Formulations (prepared from ingredients in solid form):

The beyond-use date is not later than 14days for liquid preparations when stored at cold temperatures between 2 °and 8 °(36 °and 46 °F).

For All Other Formulations:

The beyond-use date is not later than the intended duration of therapy or 30 days, whichever is earlier. These beyond-use date limits may be exceeded when there is supporting valid scientific stability information that is directly applicable to the specific preparation (i.e., the same drug concentration range, pH, recipients, vehicle, water content, etc.).

1. Labelling

Compounded products must be labelled according to regulatory requirements. In addition, labels of these products should also include names of any preservatives used. This information may be useful for avoiding sensitivity reactions in susceptible individuals and for explaining differences in flavor where the preservatives vary.

When non-pharmacopoeia products are prepared, the labels should document the complete list of ingredients and their amounts/proportions for future reference by other pharmacists and health professionals.

The pharmacist should examine the product for correct labelling after completion of the compounding process. Labels on compounded products for individual patient should have a minimum of the following information:

- Patient's name
- Name of the compounder
- Name and address of the compounding institution
- A complete list of ingredients and preparation name
- Strength
- Quantity of each ingredients
- Directions for use
- Date of preparation
- Beyond-use date
- Storage condition
- Batch number

2. Packaging

Compounded preparations should be packaged in containers meeting standard requirements. The container used depends on the physical and chemical properties of the compounded preparation. Container–drug interaction should be considered with substances such as phenolic compounds and sportive materials (e.g., polypeptides and proteins). The containers and container closures should also be made of clean materials that are neither reactive and additive, nor absorptive. The containers and closures shall be of suitable material so as not to alter the quality, strength, or purity of the compounded drug.

Appendix 12 Compounding Process Recoding Form (Compounding sheet)

Name of the dispensary/health institution _____Date _____

Batch number/control number_____ Batch quantity _____

Description of ingredients				**Name or initials of the person in charge**
Name	**Source**	**Batch number**	**Quantity**	
Description of the steps of the preparation				
Beyond use Date: ……				
Yield: …… Loss: …… Reason for loss: ……				
Prepared by: Name _____ Signature_____ date _____				
End control before release of the product				
Parameters	***Comment***			
Approved by: Name _____ Signature_____Date_____				

Appendix 13 Compounding Prescription Register Forms

Appendix F Compounding Prescription Registration Book

S N	Patient identifiers					Diagnosis (ICD) Code No.	Description of the preparation				Name or Initials of the dispenser
	Name of the Patient	Sex	Age	Wt.(kg)	Card No		Ingredients		Qty dispensed	Control number	
							Name & strength	Quantity			

Appendix F Compounding Prescription Registration Book

S N	**Patient identifiers**					**Diagnosis (ICD) Code No.**	Description of the preparation				Name or Initials of the dispenser
	Name of the Patient	Sex	Age	Wt.(kg)	Card No		Ingredients		Qty dispensed	Control number	
							Name & strength	Quantity			

Appendix 14 Prepaid ADR reporting Form

Food Medicine and Health Care Administration and Control Authority of Ethiopia (FMHACA)
Adverse Drug Event reporting form

Patient Name (abbreviation)	Card No	Age, Date of birth	Sex	Weight	Height

Ethnic group	Substance of abuse

Information on suspected drug/vaccine **S=suspected drug** **C=concomitantly used drugs**

Drug name(write all information including brand name batch no and manufacturer	S/C	Dose/dosage form, route, frequency	Date drug taking was started (D/M/Y)	Date drug reaction started (D/M/Y)	Date drug taking was stopped (D/M/Y)	Indication (Reason for drug use)

Adverse drug event description(include all available laboratory test results)

Reaction necessitated:
Discontinuation of drug/s □ YES □ No
Hospitalization prolonged □ YES □ No

Reaction subsided after D/C of suspected drug?
□ YES □ No □ Information not available
Reaction reappeared after restart of suspected drug?
□ YES □ No □ Information not available

Treatment of reaction:

Outcome: □ Died due to the adverse event □ Died, drug may be contributory □ Not yet recovered
□ Recovered without sequelae □ Recovered with squelae □ Unknown

Squelae:

Relevant medical conditions such as allergies, renal disease, liver disease, other chronic diseases, pregnancy etc

Reported by: Name	Profession:	Email address:	Telephone

Name of health institution: Date

Product quality problem: Color change, separating of components, powdering, crumbling, caking, molding, change of odor, incomplete pack, suspected contamination, poor packaging/poor labeling, etc (Write if anything different than given above)

Drug trade name	Batch No	Registration no	Dosage form and strength	Size /type of package

For office use only	
Received on:	Registration no:
Key: D/M/Y ; Date /Month/Year D/C: Discontinue treatment Y:YES N:NO	

መጀመሪያ እዚህ ላይ እጠፍ

First fold here.

This ADE reporting form was prepared by FMHACA in collaboration with MSH/SPS and financial support from USAID

ቀጥሎ እዚህ ላይ እጠፍ

Next fold here.

what to report

All suspected reactions to drugs
Unknown or unexpected reactions
Serious adverse drug reactions
Unexpected therapeutic effects
All suspected drug interactions
Product quality problems
Treatment failures
Medication errors

NB. Drugs includes

Conventional drugs
Herbal drugs
Traditional medicines
Biologicals
Medical supplies
Medicated cosmetics

From ----------

የጉዳይ መስጫ አገልግሎት ፈቃድ ቁጥር HQ2
Business Reply Service License No HQ2

Postage prepaid

Food, Medicine and Health care Administration
And Control Authority of Ethiopia

Food, Medicine and Health Care Administration and Control Authority
Regulatory Information Development and Dissemination Team
P.O.Box 5681 Tel.0115-523142
Addis Ababa, Ethiopia