MSQH

EDUCATOR
ENABLER
EVALUATOR

MALAYSIAN SOCIETY FOR QUALITY IN HEALTH

STANDARDS MALAYSIA

ISQua Accreditation ORGANISATION

Performance Indicators

MSQH Hospital Accreditation Standards 5th Edition 2017

msqh@msqh.com.my

www.msqh.com.my

+603 2681 2232

MESSAGE FROM THE CHIEF EXCECUTIVE OFFICER
MALAYSIAN SOCIETY FOR QUALITY IN HEALTH

This document is the guide for the measurement of Performance Indicators identified for each Service Standards in the MSQH Hospital Accreditation Standards - 5th Edition; developed, implemented and co-ordinated by the Malaysian Society for Quality in Health (MSQH), a healthcare standards and accreditation body in Malaysia

The contents of this document may change from time to time at the discretion of the MSQH Committee, to reflect changes in strategy, policy direction and process guide consequent to reforms in the international and the Malaysian Healthcare arena, inputs and feedback from its stakeholders, as well as from external and internal clients of MSQH to accommodate the current needs of each service.

The improvement of safety and quality of services will require objective measurements of the quality of care as well as the expected outcomes. This requires the development of objective performance measurements that will measure structure, process and outcomes including technology or other relevant areas. This will require multi-disciplinary and collaborative approaches to achieve better and safer healthcare outcomes.

Let this MSQH Performance Indicators Guide be a testimony to the untiring efforts of all those who have developed these indicators and MSQH surveyors in their pursuit of institutionalisation of a culture of measuring performance improvement.

I wish you every success in implementing as well as improving the safety and quality of Healthcare services.

Assoc. Prof. Dr M.A. Kadar Marikar
Chief Executive Officer, MSQH

LIST OF PERFORMANCE INDICATORS FOR MSQH HOSPITAL ACCREDITATION STANDARDS - 5th EDITION

SERVICE STANDARD 01: GOVERNANCE, LEADERSHIP AND DIRECTION			
There is tracking and trending of the following specific performance indicators for the service:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of patients leaving hospital against medical advice relative to all patients hospitalised within a specified period	Downward Trends	Monthly
2.	Percentage of incidents/accidents during hospitalisation of patients as percentage of all admitted patients	Downward Trends	Monthly
3.	Hospital wide patient satisfaction survey (six monthly basis)	> 80% patient satisfaction level	6 Monthly
4.	In addition, healthcare facilities are required to monitor any other two (2) indicators with tracking and trending analysis to support its goals and objectives (**This is Hospital Management related performance**)		6 monthly

SERVICE STANDARD 01: GOVERNANCE, LEADERSHIP AND DIRECTION

Indicator 01 : **Percentage of patients leaving hospital against medical advice relative to all patients hospitalised within a specified period.**

Rationale :
This indicator was selected as a generic indicator of the quality of in-patient care because:

- Incidence of patients discharged At Own Risk (AOR) against medical advice is still prevalent in hospitals especially those without specialist services.
- AOR discharge occurring frequently is a proxy indication of lack of confidence of the patients in the care given at the facility.
- The occurrence of AOR discharge should be minimised to include mainly those seeking higher levels of care or facilities with better amenities.

Definition of Term :

Discharge against medical advice (AOR Discharge)
Patient discharges himself/herself from the hospital when he/she is deemed not fit medically despite being advised against it.

Inclusion Criteria	**:**	Patients discharged AOR but returned for re-admission
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Total number of patients discharged against medical advice during the month	X 100%
Denominator	:	Total number of patients admitted during the month	

Target	:	Downward Trend
Data Collection	:	Monthly
Comments/Review	:	-

SERVICE STANDARD 01: GOVERNANCE, LEADERSHIP AND DIRECTION

Indicator 02 : **Percentage of incidents/accidents during hospitalisation of patients percentage as of all admitted patients**

Rationale :
This indicator was selected as a generic indicator of the delivery of safe patient care because:

- A key component of clinical governance framework is the responsibility of every health care leader to ensure that their organisation monitors and acts on incidents that can potentially compromise patient and staff safety in their organisations.
- Incident Reporting ensures sharing of lessons learnt from incidents, root cause analysis and best practices in patient safety.
- Incident Reporting facilitates patient and staff safety efforts including the reduction of risk to patients and staff.

Definition of Terms :

1. Incidents occurring during hospitalisation of patients:

Any deviation from usual medical care that causes an injury to the patient or poses risk of harm, that Include near misses, errors, preventable Adverse Events and hazards:

- Near Misses - *A* near miss in medicine is an event that might have resulted in harm but the problem did not reach the patient because of timely intervention by *healthcare* providers or the patient or family, or due to good fortune. *Near misses* may also be referred to as "close calls" or "good catches." (Ref: Institute of *Medicine*, USA)
- Adverse Event - An injury related to medical management rather then complications of disease. Medical management includes all aspects of care including diagnosis and treatment, failure to diagnose and treat and the systems and equipment used to deliver care. Adverse events maybe preventable or non- preventable.
- Errors are mishaps that have the potential to cause an adverse event.
- Hazard refers to any threat to safety e.g. unsafe practices, conduct, equipment, labels and names.

2. Incident Reporting :

An Incident Reporting System refers to the processes and technology involved in the standardization, formatting, communication, feedback, analysis, learning, response and dissemination of lessons learned from reported events; and analysing the incidents scientifically in a structured manner through Root Cause Analysis.

Inclusion Criteria	**:**	All accidents & incidents, near misses, adverse events
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Outcome Indicator**

Numerator	**:**	Number of incidents and accidents experienced by all inpatients over a month	X 100%
Denominator	**:**	Total number of admissions over the same month	
Target	**:**	Downward Trend	
Data Collection	**:**	Monthly	
Comments/Review	**:**	-	

SERVICE STANDARD 01: GOVERNANCE, LEADERSHIP AND DIRECTION

Indicator 03 : Hospital wide patient satisfaction survey (six monthly basis)

Rationale :
This indicator was selected:

- As proxy to measurement of patient- centred services and level of client satisfaction to meeting patient needs from registration for out-patient care to admission and hospital stay for care and treatment.
- Patient Satisfaction Survey is one of the tools that can be used in recognizing areas for improvement in the hospital services provided.

Definition of Terms :

Patient Satisfaction Survey

Patient satisfaction survey is a measure of the extent to which a patient is content with the care they received from their healthcare providers as well as the environment and amenities within the facility. Refers to the survey responses through a set of Survey Questionnaire.

Inclusion Criteria	**:**	Patients who participates in the patient satisfaction survey (out-patients and in- patients)
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator**
Numerator	**:**	Number of participating patients (out-patient & in- patients) who indicated they were 'satisfied' in the patient satisfaction survey with > 80% satisfaction level
Denominator	**:**	Total number of patients who participated in the Patient Satisfaction Survey
Target	**:**	> 80% patient satisfaction level
Data Collection	**:**	6 Monthly
Comments/Review	**:**	**–**

SERVICE STANDARD 02: ENVIRONMENTAL AND SAFETY SERVICES			
There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following <u>including the mandatory indicator.</u>			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of new staff (includes all on-site outsourced service providers) given orientation on Environmental, Safety and Health Policy and Programme	80%	6 Monthly
2.	Percentage of staff given continuous training in specific aspects of Environmental, Safety and Health	80%	3 Monthly
3.	**<u>Mandatory</u>** Percentage of workplace hazards identified and risk managed	100%	Monthly

SERVICE STANDARD 02: ENVIRONMENTAL AND SAFETY SERVICES

Indicator 01 : Percentage of new staff (includes all on site out sourced service providers) given orientation on Environmental, Safety and Health Policy and Programme

Rationale : This indicator was selected because:

- Knowledge on Environmental, Safety and Health Policy and Programme is an important aspect of patient and staff safety for all health care personnel to acquire. It is an important element of continuing education on occupational safety and health to ensure staffs are aware of and work and provide care in a safe environment.

- The Hospital Safety and Health Committee must undertake intense surveillance of the incidence of needle stick injury, patient falls among others which are proxy indicators of the effectiveness of the safety program and risk management in the hospital.

Definition of Terms **:**

Safety and Health Requirements: As per Occupational Safety and Health Act 1994 & Private Healthcare Facilities and Services Act 1998, Regulations 2006

Inclusion Criteria : All new staff including onsite outsourced services staff

Exclusion Criteria : NA

Type of Indicator : Rate Based Process Indicator

Numerator	**:**	Total number of new staff(including all on site out-sourced service providers) given orientation on Environmental , Safety and Health Policy and Programme	X 100%
Denominator	**:**	Total number of new staff in the Facility - Full Time staff equivalent (including all on site out-sourced service providers)	
Target	**:**	80%	
Data Collection	**:**	6 Monthly	
Comments/Review	**:**	-	

SERVICE STANDARD 02: ENVIRONMENTAL AND SAFETY SERVICES

Indicator 02 : Percentage of staff given continuous training in specific aspects of Environmental, Safety and Health

Rationale : This indicator was selected as a generic indicator on staff awareness and practices on safety and health requirements because:

- Knowledge on Environmental, Safety and Health Policy and Programme is an important aspect of patient and staff safety for all health care personnel to acquire. It is an important element of continuing education on occupational safety and health to ensure staffs are aware of and work and provide care in a safe environment.

- The Hospital Safety and Health Committee must undertake intense surveillance of the incidence of needle stick injury, patient falls among others which are proxy indicators of the effectiveness of the safety program and risk management in the hospital.

Definition of Terms :

1.*Continuous Training:*

Refers to continuing education/training program designed to educate an individual and give him or her further skills or knowledge to be applied in his or her line of work. These programs are intended to educate persons on new advancements, or to build upon a person's expertise in a given field and/or as required to maintain certification or licensure.

2.*Safety and Health Requirements*: As per Occupational Safety and Health Act 1994 & Private Healthcare Facilities and Services Act 1998, Regulations 2006

3.*Specific Aspects of Environmental, Safety & Health* - As per MSQH Standard No. 02, these include:
a) Occupational Safety and Health (b) Fire Safety (c) Disaster Management : External Disaster & Internal Disaster (d) Hazardous Material and Recyclable Waste Management (e) Security Services (f) Vector and Pest Control

Inclusion Criteria	**:**	All staff working in the facility (including on site out-sourced service providers)
Exclusion Criteria	**:**	Clinical Risk Management programme
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	**:**	Total number of staff (including all on site out-sourced service providers) given continuing training in specific aspects of Environmental , Safety and Health	X 100%
Denominator	**:**	Total number of staff in the Facility - Full Time staff equivalent (including all on site out-sourced service providers)	

Target	**:**	80%
Data Collection	**:**	3 Monthly
Comments/Review	**:**	-

SERVICE STANDARD 02: ENVIRONMENTAL AND SAFETY SERVICES

Indicator 03 : Percentage of workplace hazards identified and risk managed

Rationale :This indicator was selected as a generic indicator to:

- Reflect the implementation of Safety and Health activities in the Facility to provide a safe workplace for staff as well as safe environment for patients and visitors. Hazard Identification Risk Analysis and Control (HIRAC) Program including mitigation of risks at the work place and processes for the various activities and coordination and linkages with other Risk Management activities should be clearly defined and implemented to ensure a safe environment for patients, staff and visitors.

***Definition of Terms*:**

1. ***Workplace Health and Safety:***

Is a multidisciplinary field concerned with the safety, health, and welfare of people at work? The goals of occupational safety and health programs include ensuring a safe and healthy work environment. Occupational Safety and Health also protects co-workers, patients, family members, employers, customers and many others who might be affected by the workplace environment. All organizations have the duty to ensure that employees and any other person who may be affected by the organization's activities remain safe at all times.

2. ***Workplace Hazards:***

Workplace hazards can come from a wide range of sources. An occupational or workplace hazard is a thing or situation with the potential to harm a worker. Occupational hazards can be divided into two categories: safety hazards that cause accidents that physically injure workers, and health hazards which result in the development of disease. Hazards can also be rated according to the severity of the harm they cause - a significant hazard being one with the potential to cause a critical injury, acute and chronic diseases and/or death.

3. ***Categorization of Hazards/Risks*** **:**

a) ***Hazards/risks*** can be grouped under various categories as listed below:

- Bio-mechanical and Postural
- Physical Environment and Workplace Design
- Mechanical
- Radiation
- Electrical
- Chemicals and Toxicity
- Biological and Human
- Organizational and Procedural Arrangements eg sharps injury
- Psycho- Social Environment and Task Design
- Natural Environment

b) Levels of Risks **:** Risk Assessments are based on two(2) key factors:

- the severity of any injury/illness resulting from the hazard and
- the probability that the injury/illness will actually occur

Inclusion Criteria **:** All incidences of hazards occurring in the workplace related to employees (including on site out-sourced service providers), patients and visitors

Exclusion Criteria **:** Clinical Risks/adverse events

Type of Indicator **: Rate Based Process Indicator**

Numerator	:	Total number of workplace hazards occurring among staff, patients and visitors in all sectors of the facility **identified and risks managed** over a specific period	X 100%
Denominator	:	Total number of workplace hazards occurring among staff, patients and visitors in all sectors of the Facility over a specific period	
Target	:	100%	
Data Collection	:	Three (3) Monthly	
Comments/Review	:	–	

SERVICE STANDARD 03: FACILITY AND BIOMEDICAL EQUIPMENT MANAGEMENT & SAFETY			
There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of Planned Preventive Maintenance being done on schedule	98%	Monthly
2.	Percentage of work orders completed on schedule.	98%	Monthly
3.	Percentage of system/service downtime	5%	Monthly
4.	Response time to equipment failure	Critical care equipment – 15 minutes Others equipment – 30 minutes)	Monthly

SERVICE STANDARD 03: FACILITY AND BIOMEDICAL EQUIPMENT MANAGEMENT & SAFETY

Indicator 01: Percentage of Planned Preventive Maintenance being done on schedule

Rationale : This indicator was selected as a generic indicator of the delivery of safe patient care in the hospital because:

- Planned preventive maintenance of facilities and equipment in a hospital is an important component of Facility Management to provide safe patient care.
- Without regular maintenance there will be likelihood of increasing demands for high-cost maintenance elements such as building services, re-roofing, or structural repairs. Therefore, it is financially advantageous, if not essential, to have a Planned Preventative Maintenance (PPM) schedule. A PPM schedule can ensure that routine maintenance and repair works are implemented to ease out peaks and troughs in the annual maintenance cost cycle of buildings and equipment and ensure safe patient care without interruptions to life saving procedures.
- Long-term benefits of preventive maintenance include:
  - Improved system reliability
  - Reduced replacement costs
  - Decreased system downtime
  - Better spares inventory management

Definition of Terms **:**

Planned Preventive Maintenance (PPM)

Planned Preventive Maintenance (PPM) is regular repetitive work done to keep facilities and equipment in good working order and to optimize its efficiency and accuracy. The dates and scope of tasks are defined as Time based maintenance plans or Performance based maintenance plans.

Inclusion Criteria **:** All types of facilities and equipment used in all services of the Facility/Organisation for out-patients and in- patients

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator	:	Numbers of asset undergone planned preventive maintenance for the month	X 100%
Denominator	:	Numbers of asset scheduled for planned preventive maintenance for the month	
Target	**:**	98%	
Data Collection	**:**	Monthly	
Comments/Review	**:**	**–**	

SERVICE STANDARD 03: FACILITY AND BIOMEDICAL EQUIPMENT MANAGEMENT& SAFETY

Indicator 02 : Percentage of work orders completed on schedule

Rationale : This indicator was selected as a generic indicator of the delivery of safe patient care in the hospital because:

- Maintenance and repair work is needed for existing systems and equipment already in place.
- Prompt maintenance of facilities and equipment in a hospital is an important element of Facility Management to provide safe patient care.
- Without regular preventive and corrective maintenance there will be likelihood of increasing demands for high-cost maintenance elements such structural and equipment repairs. Therefore, it is financially advantageous, if not essential, to have a Planned Preventative and repair works implemented to ease out peaks and troughs in the annual maintenance cost cycle of facilities and equipment and ensure safe patient care without interruptions to life saving procedures.

Definition of Terms:

1.Work Order

- A means of communication for maintenance, repair and installation needs from approved staff to the Maintenance Department.
- A work order is a written request that a task or project need to be completed. The order can be sent from a customer to a contractor or vendor. It is also a written order from the customer providing specific or blanket authorization to the contractor to proceed with the performance of a contracted work/project.

2.*Completed on Schedule:*

Completed on time - The critical path of a project may change from time to time as activities are completed ahead of or behind schedule. The series of activities that define the total time taken.

Inclusion Criteria	**:**	All request for repairs for facilities and equipment received and the corresponding number of work orders issued by the maintenance department for each month
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Numbers of work orders completed on schedule for the month X 100%
Denominator	:	Numbers of work orders issued for the month

Target	**:**	98%
Data Collection	**:**	Monthly
Comments/Review	**:**	**–**

SERVICE STANDARD 03: FACILITY AND BIOMEDICAL EQUIPMENT MANAGEMENT& SAFETY

Indicator 03 : Percentage of system/service downtime

Rationale : This indicator was selected as a generic indicator of the delivery of safe patient care in the hospital because:

- Prompt maintenance and repair of existing systems, facilities and equipment in a hospital is an important element of Facility Management to provide safe patient care.
- The downtime for maintenance of facilities and equipment should be according to the existing type of systems/services in place in accordance to the contractual agreement without interruptions to life saving procedures.

Definition of Terms:

Downtime:

The term downtime is used to refer to periods when a system is unavailable. Downtime or outage duration refers to a period of time that a system fails to provide or perform its primary function. Reliability, availability, recovery, and unavailability are related concepts. The unavailability is the time-span that a system is unavailable or offline. This is usually a result of the system failing to function because of an unplanned event, or because of routine maintenance (a planned event).

Some facilities measure the downtime incurred during a work shift, or during a 12 or 24 hour period. Another common practice is to identify each downtime event as having an operational, electrical or mechanical origin.

Inclusion Criteria : All systems/service/equipment that face downtime and failure to provide its primary function for each month

Exclusion Criteria : NA

Type of Indicator : **Rate Based Process Indicator**

Numerator	:	Numbers of systems/services/ equipment in the Facility that faced downtime and rectified for the month	X 100%
Denominator	:	Total numbers of systems/services/ equipment in the Facility that faced downtime for the month	

Target : 5%
Data Collection : Monthly
Comments/Review : **–**

SERVICE STANDARD 03: FACILITY AND BIOMEDICAL EQUIPMENT MANAGEMENT& SAFETY

Indicator 04 : Response time to equipment failure

Rationale : This indicator was selected as a generic indicator of the delivery of safe patient care in the hospital because:

- Prompt repairs of existing systems, facilities and equipment in a hospital is an important element of Facility Management to provide safe patient care.
- The response time for equipment failure should be prompt to the type of service areas e.g. critical care and others without interruptions to life saving procedures.

***Definition of Terms*:**

Response Time to Equipment Failure:

The response time to equipment failure is the measure of the duration between the call received from the client to the Maintenance Department and when the technician arrives to the individual location site. The response time is dependent on the urgency of the equipment, the type of service area and impact on patient safety. Standards are usually set by the organization on the tolerance time e.g Critical care equipment – 15 minutes , Others equipment – 30 minutes)

Inclusion Criteria **:** All calls received from individual service areas of the Facility on complaints of equipment failure and the corresponding response time for each event in the month

Exclusion Criteria **:** NA

Type of Indicator **: Response time**

Critical Care

Numerator : Total cumulative number of minutes taken for response time for all incidents of equipment failure from critical care areas of the Facility for the month

Denominator : Total numbers of calls received from critical care areas of the Facility on equipment failure for the month

Other Service Areas

Numerator : Total cumulative number of minutes taken for response time for all incidents of equipment failure from other service areas of the Facility for the month

Denominator : Total numbers of calls received from other service areas of the Facility on equipment failure for the month

Target **:** Critical Care equipment – 15 minutes , Others equipment – 30 minutes
Data Collection **:** Monthly
Comments/Review **: –**

SERVICE STANDARD 04: NURSING SERVICES			
There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of intravenous (I/V) line complications (needles out, redness of skin, infection sites, extravasation)	≤ 0.5%	Monthly
2.	Percentage of pressure sore among bed ridden patients	Downward Trend	Monthly
3.	Rate of patient falls	Downward Trend	Monthly

SERVICE STANDARD 04: NURSING SERVICES

Indicator 01 : Percentage of intravenous (I/V) line complications(needles out, redness of skin, infection of sites, extravasation)

Rationale : This indicator was selected because:

- This indicator looks at patient safety and staff competency in the Nursing Service. It is a proxy indicator that reflects the quality of nursing care provided for in-patients.
- Intravenous line complications has a direct impact on patient safety as it can cause discomfort, pain and prolong inpatient stay that may lead to the patient suffering from economic consequences.

Definition of Terms:

1. *Intravenous line complications* include infection of site, extravasation and needles being out.

2. *Infection of intravenous site* is characterised by pain, tenderness, warmth, localised swelling and redness at or around the intravenous insertion site and causing reduced mobility of the extremities.

3. *Extravasation* is the accidental administration of intravenously (IV) infused medications into the extravascular space/tissue around infusion sites characterized by swelling and redness around the site.

Inclusion Criteria **:** All in-patients who have received intravenous therapy during his/her current hospital stay is observed until discharge.

Exclusion Criteria **:**

1. Complication that has been counted in previous admission
2. Psychiatry patient
3. Neonates patient
4. Paediatric patient

Type of Indicator **: Rate Based Process Indicator**

Numerator	:	Total number of incidences of (I/V) line site complications among in-patients during the study period	X 100%
Denominator	:	Total number of intravenous (I/V) lines set up during the study period	

Target	**:**	≤ 0.5%
Data Collection	**:**	Monthly
Comments/Review	**:**	**–**

SERVICE STANDARD 04: NURSING SERVICES

Indicator 02 : Percentage of pressure sore among bed ridden patients

Rationale : This indicator was selected because:

- Pressure ulcers/sores result in patient discomfort, increased length of stay, morbidity and mortality.
- This is a proxy indicator that reflects patient safety and the quality of nursing care.

Definition of Terms :

1. Pressure Ulcer/Sore:

Pressure ulcer/sore is defined as a localized injury to the skin and/or underlying tissue usually over the bony prominence as a result of pressure or pressure in combination with shear and/or friction. It is a circumscribed area in which cutaneous tissue has been destroyed and there is progressive destruction of underlying tissue caused by interference with circulation and nutrition to the area. Signs include blister or broken skin or sore formation over pressure areas (redness is excluded).

2. Non- ambulant patients/bed- ridden

Bed - ridden patients who are unable to carry out activities of daily living e.g. feed themselves, bathe, move or void themselves. All patients admitted shall have an initial assessment process where nursing needs are identified including prevention of pressure sores for non- ambulant patients

Inclusion Criteria : All bed ridden non-ambulant in-patients who develop pressure sores during their stay in hospital (including those with pre-admission pressure sores which have worsened or developed new pressure sores in other sites).

Exclusion Criteria **:** All patients admitted with pre- admission pressure sores present which have become better.

Type of Indicator **: Rate Based Process Indicator**

Numerator	:	Number of non- ambulant patients who developed new pressure ulcers (including those with pre-admission pressure sores which have worsened) during their stay in the hospital/ward in the month	X 100%
Denominator	**:**	Total number of non-ambulant patients admitted to the hospital/ward in the month	

Target	**:**	Downward trend
Data Collection	**:**	Monthly
Comments/Review	**:**	_

SERVICE STANDARD 04: NURSING SERVICES

Indicator 03 : Rate of Patient Falls

Rationale : This indicator was selected because:

- Globally, falls are a major public health problem. While all people who fall are at risk of injury, the age, gender and health of the individual can affect the type and severity of injury.
- This indicator is a tracer marker that measures patient safety
- Fall prevention strategies should be comprehensive and multifaceted. They should support policies that create safer environments and reduce risk factors.

Definition of Term :

Patient Falls:

A fall is defined as an event which results in a person coming to rest inadvertently on the ground or floor or other lower level. Fall-related injuries may be fatal or non-fatal[1] though most are non-fatal.

Falls are the second leading cause of accidental or unintentional injury deaths worldwide. Older people have the highest risk of death or serious injury arising from a fall and the risk increases with age. Another high risk group is children.

(Source: WHO)

Inclusion Criteria **:** All adult patients admitted and had a fall/falls during his/her stay in the hospital shall be included

Exclusion Criteria **:** Falls among children (paediatric patients)

Type of Indicator **: Rate Based Outcome Indicator**

Numerator : Total number of patient falls reported during their stay in the hospital/ward in the month X 100

Denominator : Total number of patients admitted in the same month

Target **:** Downward trend
Data Collection **:** Monthly
Comments/Review **: -**

SERVICE STANDARD 05: PREVENTION AND CONTROL OF INFECTION			
There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of staff trained in Prevention and Control of Infection Practices	100% new staff 85% existing staff	Monthly
2.	Percentage of Healthcare Associated Infections (HCAI)	< 5%	Monthly
3.	Number of Resistant Organisms to Antibiotics within a specified period of time	MRSA 0.3% ESBL 0.3%	Monthly

SERVICE STANDARD 05: PREVENTION AND CONTROL OF INFECTION

Indicator 01 : Percentage of staff trained in Prevention and Control of Infection Practices

Rationale : This indicator was selected to reflect the delivery of safe patient care in hospitals because:

- Healthcare Associated Infection (HAI) is a significant problem in hospitals and has an impact on the safety of patient, staff and visitor.
- The Hospital Infection and Antibiotic Control Committee (HIACC) must undertake intense training of all staff including staff of contracted services to ensure the effectiveness of the hospital's Prevention and Control of Infection programme. It should be compulsory rather than optional training for all relevant staff.

Definition of Term:

Training in Infection Control:

Training on Infection Control can be defined as specific training on aspects of prevention and control of infection that includes in- house training, orientation programme, conference, seminar and formal training i.e. Asia Pacific Society for Infection Control (APSIC), post basic training (6 months) in Infection Control and post graduate training.

Inclusion Criteria	**:**	All staff including specialists, medical officers, house officers, nursing staff and students (undergraduate medical students, post graduate medical students, student nurses and allied health staff) and staff of the privatised services (housekeeping, linen service, Facility and Biomedical equipment maintenance services) should be given training on infection control based on their scope of services and job description.
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Total number of existing staff in the facility (all categories including all on site out sourced service providers) who have been given training in prevention and control of infection X 100%
Denominator	:	Total number of existing staff in the facility (all categories including all on site out sourced service providers) at a given point of time.

Target	**:**	100% - Infection Control Nurse, 100% - new staff and 85% - existing staff (including re-training)
Data Collection	**:**	Monthly
Comments/Review	**:**	**-**

SERVICE STANDARD 05: PREVENTION AND CONTROL OF INFECTION

Indicator 02 : Percentage of Healthcare Associated Infections (HCAI)

Rationale : This indicator was selected to reflect the delivery of safe patient care in hospitals because:

- Healthcare Associated Infections are preventable illnesses and the prevention of these infections continues to be top priority. Therefore, periodic surveillance is essential to assess the effectiveness of the infection control programme in the hospital setting.
- Healthcare Associated Infection (HAI) is a significant potential problem in hospitals and has an important impact on the safety of patient, staff and visitor.
- The Hospital Infection and Antibiotic Control Committee (HIACC) must undertake intense surveillance of the incidence of HAI including incidence of sentinel organisms such as MRSA, which is a proxy indicator on the effectiveness of the hospital's Prevention and Control of Infection programme.

Definition of Term:

Hospital Acquired Infection(HAI)

Healthcare Associated Infection: An infection occurring in a patient in a hospital or other healthcare facility in whom the infection was not present or incubating at the time of admission. This includes the infections acquired in the hospital, but appearing after discharge, and also occupational infections among staff of the facility.

(Ref: Technical Specifications (HPIA) Version 4.0, Ministry of Health, Malaysia)

The diagnosis of a nosocomial infection is based on a combination of clinical and laboratory findings.

Inclusion Criteria	**:**	All patients who were admitted to the ward before or at 8.00 am and were not yet discharged at time of the survey.
Exclusion Criteria	**:**	Cases admitted to the hospital with pre- admission HAI (infected during stay at another healthcare facility) and patients admitted in the Psychiatric ward, Emergency Department, Labour/Delivery ward, Out- Patient Department and Day Care.
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Number of patients with Healthcare Associated Infection (HCAI) in the hospital on the day of survey	X 100%
Denominator	:	Number of hospitalised patients in the hospital on the day of survey	

Target	:	< 5%
Data Collection	:	6 Monthly- Hospital wide cross sectional point prevalence survey, collected twice a year (one day in month of March & September)
Comments/Review	:	(Ref: Technical Specifications (HPIA) Version 4.0, Ministry of Health, Malaysia)

SERVICE STANDARD 05: PREVENTION AND CONTROL OF INFECTION

Indicator 03 : Number of Resistant Organisms to Antibiotics within a specified period of time

Rationale : This indicator was selected to reflect the delivery of safe patient care in hospitals because:

- One of the major issues in our health care today is that of controlling the increase in antimicrobial resistance. Although multiple factors play a role in this problem, the selective pressures of inappropriate and widespread use of antimicrobials are considered as major contributors.
- Monitoring antimicrobial use or antimicrobial surveillance will serve as a tool for:
  - Comparison in antimicrobial use by having national benchmark data (aggregated from all hospitals);
  - Identifying and developing strategies to improve antimicrobial control through multi-disciplinary efforts involving Infectious Disease Physicians/Clinicians, Clinical Microbiologist/ Microbiologist, Pharmacist and Infection Control Nurses.

(Source: Policies and Procedures on Infection Control, Ministry of Health Malaysia 2nd Edition 2010)

- The Hospital Infection and Antibiotic Control Committee must undertake studies on the presence of resistant organisms to antibiotics and develop a hospital specific policy on the Use of antibiotics.
- Monitoring the magnitude of the presence of resistant organisms to antibiotics is an indicator of the effectiveness of the hospital's policy on the use of antibiotics and the Prevention and Control of Infection Programme.

Definition of Term:

Drug-Resistant Organisms

Drug-Resistant Organisms (DROs) are bacteria and other organisms that have developed a resistance to certain drugs. In other words, a particular drug is no longer able to kill or control a specific bacteria or organism. Other terms used to describe this situation include antibiotic resistance, antibacterial resistance, and antimicrobial resistance. Examples of drug-resistant organisms include:

1. MRSA - methicillin/oxacillin-resistant Staphylococcus aureus
2. VRE - vanomycin-resistant enterococci
3. ESBLs - extended-spectrum beta lactamases (resistant to cephalosporins and monobactams)
4. PRSP - penicillin-resistant Streptococcus pneumoniae
5. GISA - glycopeptide-intermediate Staphylococcus aureus
6. VISA - vancomycin-intermediate Staphylococcus aureus
7. VSRA - vancomycin-resistant Staphylococcus aureus (not yet found in nature, but it is believed it will emerge or evolve from VISA), and
8. MDR-TB - multidrug-resistant tuberculosis.

Inclusion Criteria	**:**	The number of patients admitted to the hospital and had developed resistance To antibiotics
Exclusion Criteria	**:**	Pre-existing infection prior to admission
Type of Indicator	**:**	**Sentinel Event**
Numerator	**:**	Number of patients developing resistance to antibiotics within a specified period of time
Target	**:**	MRSA 0.3%, ESBL producers 0.3%, Multi -resistant organisms, Carbapenem - resistant Enterobacteriaceae (CRE), vancomycin-resistant enterococci (VRE)
Data Collection	**:**	Monthly
Comments/Review	**:**	**-**

SERVICE STANDARD 07: HEALTH INFORMATION MANAGEMENT SYSTEM			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of Medical Reports prepared within the stipulated period	Secondary and Tertiary Care (Public & Private) Facility : ≤ 4 weeks Primary Care Facility : ≤ 2 weeks	Monthly
2.	Percentage of Case Summaries that were completed within 72 working hours of discharge	100%	Monthly

SERVICE STANDARD 07: HEALTH INFORMATION MANAGEMENT SYSTEM

Indicator 01 : Percentage of Medical Reports prepared within the stipulated period

Rationale : This indicator was selected because:

- There is a need to hasten the preparation of medical reports in order to satisfy our customers especially for their insurance claims, police investigations, court proceedings etc.
- Timeliness of preparation of medical reports is an indication of the efficiency of the Health Information Management Services

Definition of Terms:

1. ***Medical Reports*:**
   Written report of the results of a medical examination of a patient describing the findings during hospitalization, diagnosis and treatment and any other information on the progress, and events that happened to the individual patient during hospitalization and subsequent follow up.

2. ***Stipulated Period:***
   The preparation of completed requests for medical report must meet the following norms:
   - Secondary and Tertiary Care (Public & Private)Hospitals: ≤ 4 weeks
   - Primary Care Facility : ≤ 2 weeks

   The period of preparing completed requests for medical reports is to be calculated exclusive of public holidays.

Inclusion Criteria **:** - Plain medical reports
- Report for Insurance claims

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of Medical Reports completed within the stipulated period in the month

Denominator **:** Total number of requests for Medical Reports in the month

X 100%

Target **:** 1. Secondary and Tertiary Care (Public & Private)Hospitals: ≤ 4 weeks
2. Primary Care Facility : ≤ 2 weeks

Data Collection **:** Monthly

Comments/Review **: -**

SERVICE STANDARD 07: HEALTH INFORMATION MANAGEMENT SYSTEM

Indicator 02 : Percentage of case summaries that were completed within 72 working hours of discharge

Rationale : This indicator was selected because:

- There is a need to hasten the preparation of case summaries for continuity of care.
- Timeliness of preparation of case summaries is an indication of the timely access to records for continuity of care.

Definition of Terms:

Case Summary:

Patient Case Summary is a standardized set of basic medical data that includes the most important clinical facts required to ensure safe and secure healthcare. This summarized version of the patient's medical data gives health professionals the essential information they need to provide care in the case of an unexpected or unscheduled medical situation (e.g. emergency or accident). Though this data is mainly intended to aid health professionals in providing unscheduled care, it can also be used to provide planned medical care/continuity of care (e.g. in the case of citizen movements or cross-organizational care paths). The completion of case summaries must meet the following:

- Within 72 hours of discharge: ≥ 72 working hours after the patient is discharged.
- The period of completing case summaries is to be calculated exclusive of public holidays.

Inclusion Criteria **:** All cases discharged in a given month

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator	**:**	Number of case summaries completed within 72 working hours of discharge in a month	X 100%
Denominator	**:**	Total number of patients discharged in a month	

Target	**:**	100%
Data Collection	**:**	Monthly
Comments/Review	**:**	**-**

SERVICE STANDARD 08: EMERGENCY SERVICES			
There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following including the mandatory indicator:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	<u>Mandatory:</u> Percentage of inappropriate triaging (under triaging): Category Green patients who should have been triaged as Category Red.	 (Target: ≤ 0.5%)	Monthly Monthly
2.	Waiting time relative to Triage Category: i) Malaysian Triage Category (MTC) Red seen immediately ii) Malaysian Triage Category (MTC) Yellow seen within 30 minutes iii) iii) Malaysian Triage Category (MTC) Green seen within 90 minutes	 100% ≥85% > 70%	
3.	Unplanned return of patient seen at Emergency Department within 24 hours for similar complaint	3%	Monthly

SERVICE STANDARD 08: EMERGENCY SERVICES

Indicator 01 : Percentage of inappropriate triaging (under triaging): Category Green patients who should have been triaged as Category Red

Rationale : This indicator was selected because:

- Triage is an essential function of the Emergency Departments (EDs), whereby many patients may present multiple ill conditions simultaneously. Triage aims to ensure that patients are treated in the order of their clinical urgency and that treatment is appropriate. Triage also allows for the allocation of the patient to the most appropriate access, assessment and treatment area.
- It is a scale for rating clinical urgency. The scale directly relates triage category with a range or outcome measures (inpatient length of stay, ICU admission, mortality rate) and resource consumption (staff time, cost).
- Studies have shown that the "under triaging" of critically ill patients can increase their morbidity and mortality due to delay in their resuscitation and the provision of definitive care. Urgency refers to the need for time- critical intervention.
- This indicator measures the accuracy and appropriateness of the Triaging System in the Emergency Department (ED) to ensure that critically ill patients are not missed and categorized as "non- critical".

(Ref: Technical Specifications (KPI) Clinical Services, Medical Programme Version 04, Ministry of Health Malaysia, 2016)

Definition of Terms	**:**	
Under- triaged	**:**	Critically ill patient (MTC RED) who was triaged as non- critical patient (MTC GREEN)
Inclusion Criteria	**:**	All patients who were triaged under the Green Zone
Exclusion Criteria	**:**	Period of time when the hospital is unable to function as usual due to mass casualty/disaster/crisis
Type of Indicator	**:**	**Rate Based Process indicator**

Numerator	:	Number of MTC GREEN patients who should have been triaged as MTC RED X 100%
Denominator	:	Total number of MTC GREEN patients

Target	:	≤ 0.5%)
Data Collection	:	Monthly
Comments/Review	:	(Ref: Technical Specifications (KPI) Clinical Services, Medical Programme Version 4.0, Ministry of Health, Malaysia, 2016)

SERVICE STANDARD 08: EMERGENCY SERVICES

Indicator 02 :

i) Waiting time relative to triage category: Malaysian Triage Category(MTC) Red seen immediately (100%)

ii) Waiting time relative to triage category : Malaysian Triage Category (MTC) Yellow seen within 30 minutes (≥85%)

iii) Waiting time relative to triage category: Malaysian Triage Category (MTC) Green seen within 90 minutes (> 70%)

Rationale : This indicator was selected because:

- Waiting time relative to triage category is the clinical performance indicator for the Emergency Department
- Triage is an essential function in the Emergency Department where many patients may present simultaneously.
- Triage aims to ensure that patients are treated in the order of their clinical urgency and that their treatment is appropriately timely. It also allows for allocation of the patient to the most appropriate assessment and treatment area.
- This indicator measures the time taken for the patient to be seen by the medical officer at the Emergency Department (from the time of his/her registration) based on the relevant waiting times of the Malaysian Triage Category (MTC).

Definition of Terms:

1. ***Patients in MTC Red seen Immediately:*** Initiation of assessment and/or treatment within 5 minutes as (defined in MTC)
   Exclusion Criteria:
   i. During Mass Casualty Incident as defined by local Disaster Action Plan
   ii. Patients retriaged from green/ yellow

2. ***Patients in MTC Yellow seen within 30 minutes*****:** Initiation of assessment and/or treatment within 30 minutes
   Exclusion Criteria **:**
   i. During Mass Casualty Incident as defined by local Disaster Action Plan
   ii. Patients retriaged from green/ yellow

3. ***Patients in Green seen within 90 minutes:*** Initiation of assessment and/or treatment within 90 minutes as defined in MTC.
   Exclusion Criteria **:**
   i. Non-emergency cases: G4 (OPD cold cases seen at Emergency Department as defined in MTC.
   ii. Klinik Rawatan Pesakit Selepas Waktu Pejabat (in Ministry of Health Hospitals)

4. ***Emergency Department (ED) staff*** **:**
   i. Hospital with resident Emergency Physician, Medical officers/House officers, paramedics
   ii. Hospital without resident Emergency Physician : Medical officers, Paramedics

Type of Indicator **:** ***Waiting Time***

Malaysian Triage Category (MTC) - RED

Numerator : The number of patients allocated MTC Red who are attended by ED staff IMMEDIATELY

X 100%

Denominator : The total number of patients attending ED who are triaged to MTC Red in the time period under study.

Target : 100%
Data Collection : Monthly
Comments/Review :

Malaysian Triage Category (MTC) - YELLOW

Numerator : The number of patients allocated MTC Yellow who are attended by ED Staff within 30 minutes

X 100%

Denominator : The total number of patients attending ED who are triaged to MTC Yellow in the time period under study.

Target : ≥ 85%
Data Collection : Monthly
Comments/Review :

Malaysian Triage Category (MTC) - GREEN

Numerator : The number of patients allocated MTC Green who are attended by ED Staff within ≥ 90 minutes X100%

Denominator : The total number of patients attending ED who are triaged to MTC Green in the time period under study.

Target : > 70%

Data Collection : Monthly

Comments/Review : Ref:

1. Technical Specifications (KPI) Clinical Services, Medical Programme Version 4.0, Ministry of Health, Malaysia , 2016
2. Technical Specifications Performance Indicators for Medical Programme KPI & NIA, Ministry of Health, Malaysia, 2012

SERVICE STANDARD 08: EMERGENCY SERVICES

Indicator 03 : Unplanned return of patient seen at Emergency Department within 24 hours for a similar complaint

Rationale : This indicator was selected because:

- It is a proxy indicator on safety and effectiveness of care in the Emergency Department.
- This indicator measures the quality of care provided to patient attending the Emergency Department, It acts as a check and balance to ensure that the patients attending the Emergency Department do not receive sub-optimal care.
- Patients who are well managed should not be subject to unplanned return this early within 24 hours for similar complaint.

Definition of Terms:

Unplanned return:

Return to the Emergency Department that was unplanned for similar complaint after the initial treatment.

Inclusion Criteria	**:**	All cases seen at the Emergency Department and returns within 24 hours for the same complaint
Exclusion Criteria	**:**	Planned return for follow up for the same complaint
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Number of unplanned return of patients seen at the Emergency Department Within 24 hours for similar complaint in the month
Denominator	**:**	Total number of patients seen at the Emergency Department in the month

Target	**:**	3%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 09: CLINICAL SERVICES (NON-SPECIALIST FACILITY)			
There tracking and trending of specific performance indicators which include but not limited to at least two(2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Number of Mortality/Morbidity audits/meetings being conducted in the department with documentation of cases discussed		6 Monthly
2.	Percentage of unplanned re-admission within 72 hours of discharge		Monthly
3.	Case fatality rate for two diseases (Facility to decide based on local disease prevalence i.e. 2 top causes of admission within the service/discipline)		Monthly
4.	Percentage of paediatric patients with dengue fever diagnosed within 24 hours of admission		Monthly

SERVICE STANDARD 09: CLINICAL SERVICES (NON-SPECIALIST FACILITY)

Indicator 01 : Number of Mortality and Morbidity audits/meetings being conducted in the department with documentation of cases discussed

Rationale : This indicator was selected because:

- The main purpose of the mortality and morbidity meetings is to improve patient management and quality of care. Regular mortality and morbidity meetings serve to look at the weakness and the shortfalls in the overall management of patients, hence it will be learnt and the same mistake could be prevented and would not be repeated in the future.

Definition of Terms:

Morbidity: A diseased state

Mortality: The quality or state of being mortal

Morbidity Audits/Meetings: Discussion of case management in regards to patient morbidity, incidence reporting, issue of patient safety, clinical audit (at the hospital level).

Mortality Meeting: Discussions related to the management of the case and cause of death of the patient. (eg: Clinical audit, POMR, MMR, Dengue Mortality, TB Mortality, Mortality under 5 years of age (MDG5), Perinatal Mortality Reviews(MDG4) Inquiries) at hospital level.

Documentation: Official minutes or notes taken during the meeting with attendance list(certified by the Hospital Director/ Person-In Charge (PIC)

Inclusion Criteria **:** All Morbidity and /or Mortality meetings being conducted at the hospital level.

Exclusion Criteria **:** Time period when the hospital was unable to function as usual due to mass casualty/disaster/crisis

Type of Indicator **: This is a Process indicator**

Numerator : Number of documented mortality and morbidity meetings that were conducted in six (6) months

Target **:**
Data Collection **:** 6 Monthly
Comments/Review **:**

SERVICE STANDARD 09: CLINICAL SERVICES (NON- SPECIALIST FACILITY)

Indicator 02 : Percentage of unplanned re-admission within 72 hours of discharge

Rationale : This indicator was selected because:

- Unplanned re- admissions is often considered to be the result suboptimal care in the previous admission leading to re- admission
- Patients receiving good quality clinical services should not be subjected to unplanned re-admissions within 72 hours of discharge.

Definition of Terms:

1. **Unplanned re-admission**:

Patient being re- admitted for the management of the same clinical condition he or she was discharged with and the admission was not scheduled. (The same patient readmitted in the same unit/hospital ≤ 72 hours of previous discharge)

2. ***Same condition:***

Same diagnosis as referred to the ICD 10

Comments:
Number of readmission of one patient is considered as one case. Those on home leave or transferred to other unit is not considered as discharge

Inclusion Criteria **:** Re- admission with similar conditions (primary diagnosis) within 72 hours of discharge

Exclusion Criteria **:** At Own Risk (AOR) discharge patients during first admission

Type of Indicator **:** **Rate Based Process Indicator**

Numerator : Number of patients with unplanned re-admission to the ward within 72 hours of discharge X 100%

Denominator : Total number of patients discharged during the same period of time the numerator data was collected

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 09: CLINICAL SERVICES (NON- SPECIALIST FACILITY)

Indicator 04 : Percentage of Paediatric Patients with dengue fever diagnosed within 24 hours of admission

Rationale : This indicator was selected because:

- Dengue fever has now become endemic in Malaysia and is a potentially fatal condition whose severity and frequency may be decreased by careful management planning. This indicator is a measure of the OUTCOME of care of patients with dengue.
- The outcome of children with this condition is expected to be good with early diagnosis and compliance to standard protocols.
- This indicator measures the clinical effectiveness of management of dengue fever (both haemorrhage and non- haemorrhage).

Definition of Terms:

Dengue*:*

Dengue Fever (DF) and Dengue Hemorrhagic Fever (DHF)
This is a clinical diagnosis decided by the doctor based on clinical findings as well as the relevant investigations.

Inclusion Criteria **:** All cases of dengue fever admitted in the paediatric ward during the study period

Exclusion Criteria **:** NA

Type of Indicator **:** ***Rate Based Process Indicator***

Numerator : Number of (DF & DHF/DSS) cases diagnosed within 24 hours of admission during the study period X 100%

Denominator : Total number of (DF& DHF) cases admitted during the study period

Target :
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 09A: CLINICAL SERVICES (MEDICAL RELATED SERVICES)			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Number of Mortality/Morbidity audits/meetings being conducted in the department with documentation of cases discussed		6 Monthly
2.	Percentage of unplanned re-admission within 72 hours of discharge		Monthly
3.	Dengue Case Fatality Rate		Monthly

SERVICE STANDARD 09A: CLINICAL SERVICES (MEDICAL RELATED SERVICES)

Indicator 01 : Number of mortality and morbidity audits/meetings being conducted in the department with documentation of cases discussed

Rationale : This indicator was selected because:

- The main purpose of the mortality and morbidity meetings is to improve patient management and quality of care. Regular mortality and morbidity meetings serve to look at the weakness and the shortfalls in the overall management of patients, hence it will be learnt and the same mistake could be prevented and would not be repeated in the future.

Definition of Terms:

Morbidity: A diseased state

Mortality: The quality or state of being mortal

Morbidity Audits/Meetings:

Discussion of case management in regards to patient morbidity, incidence reporting, issue of patient safety, clinical audit (at the hospital level).

Mortality Meeting:

Discussions related to the management of the case and cause of death of the patient. (eg: Clinical audit, POMR, MMR, Dengue Mortality, TB Mortality, Mortality under 5 years of age (MDG5), Perinatal Mortality Reviews(MDG4) Inquiries) at hospital level.

Documentation:

Official minutes or notes taken during the meeting with attendance list(certified by the Hospital Director/ Person-In Charge (PIC)

Inclusion Criteria	**:**	All Morbidity and /or Mortality meetings being conducted at the hospital level.
Exclusion Criteria	**:**	Time period when the hospital was unable to function as usual due to mass casualty/disaster/crisis
Type of Indicator	**:**	**This is a Process Indicator**
Numerator	:	Number of documented mortality and morbidity meetings that were conducted in six (6) months
Target	**:**	
Data Collection	**:**	6 Monthly
Comments/Review	**:**	

SERVICE STANDARD 09A: CLINICAL SERVICES (MEDICAL RELATED SERVICES)

Indicator 02 : Percentage of unplanned re-admission within 72 hours of discharge

Rationale : This indicator was selected because:

- Unplanned re- admissions is often considered to be the result suboptimal care in the previous admission leading to re- admission
- Patients receiving good quality clinical services should not be subjected to unplanned re-admissions within 72 hours of discharge.

Definition of Terms:

Unplanned re-admission*:*

Patient being re- admitted for the management of the same clinical condition he or she was discharged with and the admission was not scheduled. (The same patient readmitted in the same unit/hospital ≤ 72 hours of previous discharge)

Same condition:

Same diagnosis as referred to the ICD 10

Comments:
Number of readmission of one patient is considered as one case. Those on home leave or transferred to other unit is not considered as discharge

Inclusion Criteria **:** Re- admission with similar conditions (primary diagnosis) within 72 hours of discharge

Exclusion Criteria **:** At Own Risk (AOR) discharge patients during first admission

Type of Indicator **: Rate Based Process Indicator**

Numerator	:	Number of patients with unplanned re-admission to the ward within 72 hours of discharge	X 100%
Denominator	:	Total number of patients discharged during the same period of time the numerator data was collected	

Target :
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 09A: CLINICAL SERVICES (MEDICAL RELATED SERVICES)

Indicator 03 : Dengue Case Fatality Rate

Rationale : This indicator was selected because:

- Dengue fever has now become endemic in Malaysia and is a potentially fatal condition whose severity and frequency may be decreased by careful management planning. This indicator is a measure of the OUTCOME of care of patients with dengue.
- This indicator measures the clinical effectiveness of management of dengue fever (both haemorrhage and non- haemorrhage).

Definition of Terms:

Dengue*:* Dengue Fever (DF) and Dengue Hemorrhagic Fever (DHF)

This is a clinical diagnosis decided by the doctor based on clinical findings as well as the relevant investigations.

Remarks

*(*a) The 2nd Revision of the Malaysian CPG on the Management of Dengue Infection in Adults 2009 strongly recommends the monitoring of Dengue CFR and DHF Fatality rate

(b) According to the said CPG, all dengue deaths should be audited at individual hospital/state/ national level

Inclusion Criteria **:** All deaths caused by dengue fever

Exclusion Criteria **:** Deaths caused by other causes

Type of Indicator **: Rate Based Output Indicator**

Numerator	:	Number of cases admitted with DF & DHF/DSS and died from DF & DHF/DSS X100%
Denominator	:	Total number of (DF& DHF) CASES admitted

Target	**:**	
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 09B: CLINICAL SERVICES (SURGICAL RELATED SERVICES)			
There is tracking and trending of specific performance indicators which include but not limited to at least two(2) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Number of Mortality/Morbidity audits/meetings being conducted in the department with documentation of cases discussed		6 Monthly
2.	Percentage of unplanned re-admission within 72 hours of discharge		Monthly
3.	Unplanned return to Operating Theatre within the same hospital admission following surgery		Monthly
4.	Percentage of patients with waiting time of more than seven (7) working days for fixation of long bone closed fracture		Monthly
5.	Subspecialties units in the Surgical Services, e.g. Orthopaedics, Otorhinolaryngology, Ophthalmology, Neurosurgery, etc shall monitor any other two (2) indicators to support its goals and objectives.	–	–

SERVICE STANDARD 09B: CLINICAL SERVICES (SURGICAL RELATED SERVICES)

Indicator 01 : Number of mortality and morbidity audits/meetings being conducted in the department with documentation of cases discussed

Rationale : This indicator was selected because:

- The main purpose of the mortality and morbidity meetings is to improve patient management and quality of care. Regular mortality and morbidity meetings serve to look at the weakness and the shortfalls in the overall management of patients, hence it will be learnt and the same mistake could be prevented and would not be repeated in the future.

Definition of Terms:

Morbidity: A diseased state

Mortality: The quality or state of being mortal

Morbidity Audits/Meetings:

Discussion of case management in regards to patient morbidity, incidence reporting, issue of patient safety, clinical audit (at the hospital level).

Mortality Meeting:

Discussions related to the management of the case and cause of death of the patient. (eg: Clinical audit, POMR, MMR, Dengue Mortality, TB Mortality, Mortality under 5 years of age (MDG5), Perinatal Mortality Reviews(MDG4) Inquiries) at hospital level.

Documentation:

Official minutes or notes taken during the meeting with attendance list(certified by the Hospital Director/ Person-In Charge (PIC)

Inclusion Criteria	**:**	All Morbidity and /or Mortality meetings being conducted at the hospital level.
Exclusion Criteria	**:**	Time period when the hospital was unable to function as usual due to mass casualty/disaster/crisis
Type of Indicator	**:**	**This is a Process Indicator**

Numerator	:	Number of documented mortality and morbidity meetings that were conducted in six (6) months

Target	**:**	
Data Collection	**:**	6 Monthly
Comments/Review	**:**	

SERVICE STANDARD 09B: CLINICAL SERVICES (SURGICAL RELATED SERVICES)

Indicator 02 : Percentage of unplanned re-admission within 72 hours of discharge

Rationale : This indicator was selected because:

- Unplanned re- admissions is often considered to be the result suboptimal care in the previous admission leading to re- admission
- Patients receiving good quality clinical services should not be subjected to unplanned re-admissions within 72 hours of discharge.

Definition of Terms:

Unplanned re-admission*:*

Patient being re- admitted for the management of the same clinical condition he or she was discharged with and the admission was not scheduled. (The same patient readmitted in the same unit/hospital ≤ 72 hours of previous discharge)

Same condition: Same diagnosis as referred to the ICD 10

Comments:
Number of readmission of one patient is considered as one case. Those on home leave or transferred to other unit is not considered as discharge

Inclusion Criteria **:** Re- admission with similar conditions (primary diagnosis) within 72 hours of discharge

Exclusion Criteria **:** At Own Risk (AOR) discharge patients during first admission

Type of Indicator **: Rate Based Process Indicator**

Numerator	:	Number of patients with unplanned re-admission to the ward within 72 hours of discharge	X 100%
Denominator	:	Total number of patients discharged during the same period of time the numerator data was collected	

Target :
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 09B: CLINICAL SERVICES (SURGICAL RELATED SERVICES)

Indicator 03 : Rate of unplanned return to Operating Theatre within the same hospital admission following surgery

Rationale : This indicator was selected because:

- Any unplanned return to the operation theatre may indicate a quality care problem due to the occurrence of intra-operative problems that are serious enough to warrant intervention post-operatively. It refers to the need for an unexpected return to the operating theatre to address a previous complication of the original operation.
- This indicator measures the clinical effectiveness of care and patient safety.

Definition of Terms:

Unplanned return to the operating theatre :

Cases requiring unplanned return to the operating theatre for further intervention during the same admission after a surgical procedure (under GA)

Inclusion Criteria **:** All cases that had undergone surgery Inclusive of day of surgery admission

Exclusion Criteria **:** Endoscopy cases and day care cases

Type of Indicator **:** **Rate Based Outcome indicator**

Numerator : Number of cases (of unplanned return to OT) after a surgical procedure under GA requiring further intervention during the same admission in the month X 100%

Denominator : Total number of cases undergone surgical procedure under GA in the month

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 09B: CLINICAL SERVICES (SURGICAL RELATED SERVICES)

Indicator 04 : **Percentage of patients with waiting time of more than seven (7) working days for fixation of long bone closed fracture**

Rationale : This indicator was selected because:

- The long waiting time for long bone closed fracture internal fixation varies from few days to weeks, thus reflecting on the workload, facilities available and planning besides increased intra-operative difficulties.
- Prolonged waiting time will lead to morbidity, extended hospital length of stay and increased health cost and also the fracture is technically more difficult to fix.
- It indicates Timely Access & Clinical Effectiveness

Definition of Terms:

Fractures *:* Defined as long bone closed fractures

Long bones*:* Humerus, Radius, Ulna, Femur, Tibia, Fibula

Internal Fixation*:* Any form of device used to hold the bone fragments internally, includes any form of plate, nail, screw and wire buried under the skin. Combination of internal and external fixation will be considered as internal fixation

Inclusion Criteria **:** All patients admitted for long bone closed fractures

Exclusion Criteria **:** i) Medically unfit patients
ii) Difficulty in obtaining consent and/or implant
iii) Patient with additional open fracture(s)

Type of Indicator ***:*** **Rate Based Outcome indicator**

Numerator : Number of patients with long bone closed fracture fixations with waiting time of more than seven (7) working days

X 100%

Denominator : Total number of patients with long bone closed fracture fixations done during the study period

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 09C: CLINICAL SERVICES (OBSTETRICS & GYNAECOLOGY SERVICES)			
There is tracking and trending of specific performance indicators which include but not limited to at least two(2) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
	FACILITY WITH SPECIALITISTS		
1.	Emergency and Elective Caesarean Rates	< 30%	Monthly
2.	Percentage of Undiagnosed ureteric injury intraoperatively during benign gynaecological surgery/ condition	≤ 1%	6 Monthly
3.	Maternal Mortality Ratio (sentinel event)	0	Monthly
4.	Incidence of 3rd and 4th degree perineal tear following vaginal delivery	≤ 10%	Monthly
	DISTRICT FACILITY WITHOUT SPECIALITISTS (MATERNITY SERVICES)		
1.	Emergency and Elective Caesarean Rates		Monthly
2.	Maternal Mortality Ratio (sentinel event)	0	Monthly
3.	Incidence of 3rd and 4th degree perineal tear following vaginal delivery (Target: less than 5%)	< 5%	Monthly

SERVICE STANDARD 09C: CLINICAL SERVICES (OBSTETRICS & GYNAECOLOGY SERVICES)

Indicator 01 : Emergency and Elective Caesarean Rates

Rationale : This indicator was selected because:

1. There is concern about whether high rates of caesarean section are justified because the procedure is not without risk. Women may experience complications after caesarean section such as haemorrhage, infection, and thrombosis, and they have an increased risk of complications in subsequent pregnancies.
2. Neonatal complications, although infrequent, include fetal respiratory distress syndrome, pulmonary hypertension, iatrogenic prematurity, and difficulty with bonding and breast feeding.
3. Adding to these concerns is the considerable variation in rates of caesarean section between the public and private healthcare facilities.
4. It is also known that an elective planned caesarean section is safer than an emergency surgery. It is good practice to track and trend the rates of elective and emergency caesarean sections.

Definition of Terms:

Caesarean Section (CS)

CS is surgery done for the delivery of the fetus via an abdominal and uterine incision.

Emergency Caesarean Section (CS):

CS done after admission for a clinical reason without prior plan during antenatal care is termed an emergency caesarean section.

Elective caesarean section

CS is done on planned basis during antenatal care. An elective caesarean section carries lesser risks to the mother and fetus compared to an emergency CS.

Inclusion Criteria **:** All cases of caesarean sections conducted during a specific period

Exclusion Criteria **:** All modes of deliveries other than Caesarean sections

Type of Indicator **:** **Rate Based Outcome Indicator**

Target : Facility with Specialists : < 30%
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 09C: CLINICAL SERVICES (OBSTETRICS &GYNAECOLOGY SERVICES)

Indicator 02 : Percentage of undiagnosed ureteric injury intraoperatively during benign gynaecological surgery/condition

Rationale : This indicator was selected because:

- Patient safety is the important emphasis in delivering medical care. However, complications during surgery do occur but failure to recognize the complication is not acceptable.
- In gynaecological surgery, ureteric injury is a recognized complication but it is the responsibility of the surgeon to recognize it during surgery when primary repair can be arranged.
- The incidence of undiagnosed ureteric injury is a debilitating injury to the patient with possible long term complications. The use of this indicator would be reflective of the prompt diagnosis and speed of instituting care that would prevent the patient from enduring prolonged discomfort, excuriating pain and infection.
- To ensure competency and adherence to safety in performing hysterectomy for benign gynaecological conditions.

Definition of Terms:

1. Ureteric injury – Any type of ureteric injury.

Ureteric injuries can occur during "simple" routine pelvic surgeries, such as hysterectomies, and the risk increases in the presence of comorbidities i.e. pelvic inflammatory diseases and is associated with significant morbidity. The anatomic proximity of the ureters to the genital tract places them at risk of injury during pelvic surgery i.e. gynaecological procedures.

2. Benign Gynaecological Surgery – Hysterectomy for benign gynaecological condition.

3. Undiagnosed ureteric injury – Failure to recognise ureteric injury during surgery

Inclusion Criteria **:** All cases of unrecognised intraoperative ureteric injury who had undergone obstetric & gynaecological surgery including LSCS

Exclusion Criteria **:** None

Type of Indicator **: Rate Based Outcome Indicator**

Numerator : Number of patients with undiagnosed intraoperative ureteric injury X 100%

Denominator **:** Total numbers of hysterectomy done for benign gynaecological condition

Target **:** ≤ 1% (facilities with specialists)
Data Collection **:**
Comments/Review **:**

SERVICE STANDARD 09C: CLINICAL SERVICES (OBSTETRICS &GYNAECOLOGY SERVICES)

Indicator 03 : Maternal Mortality Rate (MMR)

Rationale : This indicator was selected because:

- This indicator reflects maternal health and enables safety considerations in reducing maternal mortality.
- Most maternal deaths are avoidable, as the health-care solutions to prevent or manage complications are well known. All women need is access to antenatal care in pregnancy, skilled care during childbirth, and care and support in the weeks after childbirth. It is particularly important that all births are attended by trained and skilled health professionals, as timely management and treatment can make the difference between life and death. To improve maternal health, barriers that limit access to quality maternal health services must be identified and addressed at all levels of the health system.

Definition of Terms:

Maternal Death
According to the World Health Organization (WHO), maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Generally, there is a distinction between a direct maternal death resulting from complications arising during pregnancy, labour or during the post-partum period. Deaths may result from interventions, omissions, incorrect treatment or from a chain of events resulting from any of the above. The indirect obstetric deaths may result from previous existing disease or diseases, which are aggravated by the pregnancy resulting in her death. An example would be heart disease. Fortuitous deaths are those deaths that occur in a pregnant woman which are unrelated to her pregnancy and may have caused her death even if she were not pregnant.

Inclusion Criteria	**:**	All direct and indirect maternal deaths
Exclusion Criteria	**:**	Fatalities during but unrelated to a pregnancy are termed fortuitous maternal deaths.
Type of Indicator	**:**	**Sentinel Event**

Numerator	**:**	Total number of Maternal Deaths	
Denominator	**:**	Total number of Live Births	X 1000
Remarks	**:**	Maternal Mortality Rate is expressed as per 100,000 live births.	

Target	:	0
Data Collection	:	Monthly
Comments/Review	:	

SERVICE STANDARD 09C: CLINICAL SERVICES (OBSTETRICS &GYNAECOLOGY SERVICES)

Indicator 04 : Incidence of 3rd and 4th degree perineal tear following vaginal delivery

Rationale : This indicator was selected because:

- Obstetric Trauma is a debilitating injury to the patient. The injury of third and fourth degree perineal tears during vaginal delivery extends to the perineal muscles, anal sphincter and bowel wall, and these require surgical treatment post- delivery. Possible long term complications include continued perineal pain and anal incontinence. These types of tears can be prevented/reduced by employing appropriate labour management and care standards.

Definition of Terms:

3rd and 4th degree perineal tear – refers to incidence of Perineal Laceration /tear following vaginal delivery.

Inclusion Criteria **:** Patients who underwent vaginal deliveries in the hospital:
- Without instrumentation
- Sustained third (3rd) degree and fourth (4th) degree perineal laceration/tear

Exclusion Criteria **:** Patients who delivered outside of the hospital

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of patients with 3rd and 4th degree tear following vaginal delivery without instrumentation in the hospital X 100

Denominator **:** Total number of vaginal deliveries without instrumentation in the hospital

Target **:** -District Facility without specialist: ≤ 5 -Facility with specialists: ≤ 10%

Data Collection **:** Monthly

Comments/Review **:**

SERVICE STANDARD 09D: CLINICAL SERVICES (PAEDIATRIC SERVICES)			
There is tracking and trending of specific performance indicators which include but not limited to at least three (3) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Number of Mortality/Morbidity audits/meetings being conducted in the department with documentation of cases discussed		6 monthly
2.	Percentage of paediatric patients with unplanned re-admission for the same condition within 48 hours of discharge	≤ 2%	Monthly
3.	Community acquired pneumonia death rate in previously healthy children aged between one (1) month and five (5) years.	≤1%	Monthly
4.	Percentage of non-urgent cases that were given appointment for the first consultation within six (6) weeks at Paediatric Specialist Clinic.	≥ 80%	Monthly

SERVICE STANDARD 09D: CLINICAL SERVICES (PAEDIATRIC SERVICES)

Indicator 01 : Number of mortality and morbidity audits/meetings being conducted in the department with documentation of cases discussed

Rationale : This indicator was selected because:

- The main purpose of the mortality and morbidity meetings is to improve patient management and quality of care. Regular mortality and morbidity meetings serve to look at the weakness and the shortfalls in the overall management of patients, hence it will be learnt and the same mistake could be prevented and would not be repeated in the future.

- Majority of children die below the age of 5 years. Review of all deaths among children will enable healthcare providers to rectify and improve services to children.

Definition of Terms:

Morbidity Audits/Meetings:

Discussion of case management in regards to patient morbidity, incidence reporting, issue of patient safety, clinical audit (at the department/hospital level).

Mortality Meeting:

Discussions related to the management of the case and cause of death of the patient. (eg: Clinical audit, POMR, Dengue Mortality, TB Mortality, Mortality under 5 years of age (MDG5), Perinatal Mortality Reviews (MDG4) Inquiries) at hospital level.

Documentation:

Official minutes or notes taken during the meeting with attendance list(certified by the Hospital Director/ Person-In Charge (PIC)

Inclusion Criteria : All Morbidity and /or Mortality meetings being conducted at the hospital level.

Exclusion Criteria **:** Time period when the hospital was unable to function as usual due to mass casualty/disaster/crisis

Type of Indicator **: This is a Process indicator**

Numerator : Number of documented mortality and morbidity meetings that were conducted in six (6) months

Target :
Data Collection : 6 Monthly
Comments/Review :

SERVICE STANDARD 09D: CLINICAL SERVICES (PAEDIATRIC SERVICES)

Indicator 02 : Percentage of paediatric patients with unplanned re-admission for the same condition within 48 hours of discharge

Rationale : This indicator was selected because:

- Unplanned re-admission is often considered to be the result of suboptimal care in the previous admission leading to re-admission.
- This indicator measures Clinical Effectiveness & Patient Centered care

Definition of Terms:

1. Unplanned re-admission:

Patient being re-admitted for the management of the same clinical condition he or she was discharged with and the admission was not scheduled. Return to hospital that was not planned for during initial admission

2. Within 48 hours :
≤ 48 hours (2days)

3. Readmission*:*
The same patient readmitted in the same unit/hospital ≤ 48 hours of previous discharge for the same condition (regardless of the number of times being admitted that is multiple readmission within 48 hours is considered as one admission)

4. *Discharge:*
Patients name has been removed from ward register.

Comments: Number of readmission of one patient is considered as one case. Those on home leave or transferred to other unit is not considered as discharge

Inclusion Criteria	**:**	Re- admission to hospital for the same or related problem within 48 hours of discharge
Exclusion Criteria	**:**	i. Neonates and patients of > 12 years of age ii. AOR (at own risk) discharge patients during first admission iii. Patients re- admitted to other/different hospital iv. Patients with chronic illnesses v. Re- admission requested by next of kin or other team
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Number of paediatric patients with unplanned readmission to the paediatric ward/hospital within 48 hours of discharge	X 100%
Denominator	:	Total number of paediatric patients discharged during the same period of time the numerator data was collected	

Target	:	≤ 2%
Data Collection	:	Monthly
Comments/Review	:	

SERVICE STANDARD 09D: CLINICAL SERVICES (PAEDIATRIC SERVICES)

Indicator 03: Community acquired pneumonia death rate in previously healthy children aged between one (1) month and five (5) years.

Rationale : This indicator was selected because:

- Pneumonia is a common childhood infection where mortality can be reduced by careful management.

Definition of Terms:

1. ***Community Acquired Pneumonia (CAP):***

Pneumonia acquired from normal social contact as opposed to being acquired during hospitalization and confirmed by radiological or laboratory investigations

2. ***Previously healthy children:***

Paediatric patients who are not known to have any serious medical illness before (e.g.) Chronic childhood asthma, severe malnutrition, etc)

Inclusion Criteria **:** Previously healthy children aged between one month and five (5) years

Exclusion Criteria **:**

1. Patients younger than one month and older than five(5) years
2. Hospital acquired pneumonia
3. Children with co-morbid conditions e.g. cardiac, chronic lung disease, severe neurological conditions causing restrictive lung disease etc
4. Epidemics of CAP

Type of Indicator **: Rate Based Outcome Indicator**

Numerator : Number of deaths due to community acquired pneumonia among previously healthy children aged between 1 month and 5 years X 100%

Denominator : Total number of cases admitted for community acquired pneumonia among previously healthy children aged between 1 month and 5 years

Target **:** ≥ 2 %
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 09D: CLINICAL SERVICES (PAEDIATRIC SERVICES)

Indicator 04 : Percentage of non-urgent cases that were given appointment for the first consultation within six (6) weeks at Paediatric Specialist Clinic.

Rationale : This indicator was selected because:

- Patient centred services must give priority to prompt attention to patient needs by reducing waiting times for consultation.
- This indicator reflects timeliness and patient centred care.

Definition of Terms:

Appointment:

Time taken from the date of referral received to the first consultation with the doctor at the specialist clinic.

Inclusion Criteria **:** Non- urgent cases referred to the Paediatric Specialist Clinic

Exclusion Criteria **:**
1. All urgent cases
2. Patients who request to delay the appointment date
3. Patients who request to see a specific doctor
4. Patients who default the first appointment given

Type of Indicator **: Rate Based Process Indicator**

Numerator	: Number of non- urgent cases that were given appointment for first consultation within six weeks at Paediatric Specialist Clinic	X 100%
Denominator	: Total number of non- urgent cases referred to Paediatric Specialist Clinic	

Target **:** ≥ 80%
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)			
There is tracking and trending of the following specific performance indicators where appropriate:			
No.	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Electrocardiogram taken within 10 minutes after triaging as possible Acute Coronary Syndrome patients	100%	Monthly
2.	Mortality and morbidity review of patients with acute myocardial infarction. (Morbidity discussion based on the department's discretion)	100%	Monthly
3.	Thrombolytic Therapy within 30 minutes after hospital arrival in patient with acute myocardial infarction "Door to Needle" Time.	90%	Monthly
4.	Percentage of patient who received Thrombolytic Therapy (TT) in patients admitted for acute myocardial infarction.	90%	Monthly
5.	Percentage of "Normal" Diagnostic Angiogram	<5%	Monthly
6.	Major complication rate during Diagnostic Coronary Angiogram (Death, acute myocardial infarction, stroke)	<1%	Monthly
7.	Major complication rate during Percutaneous Coronary Intervention (Death, acute myocardial infarction, stroke)	<1%	Monthly
8.	Percutaneous Coronary Intervention (PCI) within 90 minutes after diagnosed as acute myocardial infarction "Door to Balloon" Time	90%	Monthly

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)

Indicator 01 : Electrocardiogram taken within 10 minutes after triaging as possible Acute Coronary Syndrome patients

Rationale : This indicator was selected because:

- Acute Myocardial Infarction is a frequent cause of hospital death nationally.
- Patients with acute coronary syndrome (ACS) should have an electrocardiogram taken immediately upon arrival at the hospital.
- This indicator measures quality of care and adherence to practice guidelines.

Definition of Terms:

1. Acute Coronary Syndrome:

Includes patients with unstable angina, non- ST elevation myocardial infarction (NSTEMI) and ST elevation myocardial infarction (STEMI). Acute coronary syndrome (ACS) Diagnosis of STEMI is in accordance with the Clinical Practice Guidelines- Management Of Acute ST Segment Elevation Myocardial Infarction (STEMI) 2014 - (3rd edition)

2. Electrocardiogram

Electrocardiography is a commonly used, noninvasive procedure for recording electrical changes in the heart. The record, which is called an electrocardiogram (ECG or EKG), shows the series of waves that relate to the electrical impulses which occur during each beat of the heart. Output usually appears on a long scroll of paper that displays a printed graph of activity.

Inclusion Criteria **:** All cases with complaints of CHEST PAIN and suspected ACUTE MYOCARDIAL INFARCTION

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of patients triaged as possible Acute Coronary Syndrome and electrocardiogram done within 10 minutes X100%

Denominator **:** Total number of patients triaged as possible Acute Coronary Syndrome and electrocardiogram done

Target : 100%
Data Collection : Monthly
Comments/Remarks:

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)

Indicator 02: Mortality and morbidity review of patients with acute myocardial infarction.

Rationale : This indicator was selected because:

- Acute Myocardial Infarction is a frequent cause of hospital death nationally.
- The main purpose of the mortality and morbidity meetings is to improve patient management and quality of care. Regular mortality and morbidity meetings serve to look at the weakness and the shortfalls in the overall management of patients with acute myocardial infarction, hence lessons will be learnt and the same mistake could be prevented and would not be repeated in the future.

Definition of Terms:

1. Morbidity Meetings:

Discussion of case management in regards to patient morbidity, incident reporting, issue of patient safety, clinical audit (at the department/hospital level).

2. Mortality Meeting:

Discussions related to the management of the case and cause of death of the patient (i.e. Clinical Audit, PMOR, Enquiries, deaths of patients with Acute Myocardial Infarction) conducted at department/hospital level.

Inclusion Criteria	**:**	All Morbidity and /or Mortality meetings on patients with Acute Myocardial Infarction being conducted at the department/hospital level.
Exclusion Criteria	**:**	Time period when the department/hospital was unable to function as usual due to disaster/crisis
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Number of patients (admitted with Acute Myocardial Infarction) that had mortality and morbidity reviews conducted on each case	X 100 %
Denominator	:	Total number of cases (admitted with Acute Myocardial Infarction) scheduled for mortality and morbidity reviews	

Target	**:**	100% of cases
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)

Indicator 03 : Thrombolytic Therapy (TT) within 30 minutes after hospital arrival " Door to Needle" Time

Rationale : This indicator was selected because:

- Acute Myocardial Infarction is a frequent cause of hospital death nationally.
- It is important to measure the quality of care and adherence to practice guidelines.

Definition of Terms:

Thrombolytic *Therapy:*

Thrombolytic Therapy is widely used to treat Acute Myocardial Infarction to open up an acutely occluded artery. Thrombolytic Therapy should be instituted within 30 minutes after the arrival of patient and diagnosis is made at the hospital's Emergency Department.

Inclusion Criteria **:** All cases with ACUTE MYOCARDIAL INFARCTION with indications for Thrombolytic Therapy.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of Acute Myocardial Infarction patients who had Thrombolytic Therapy done within 30 minutes after hospital arrival and diagnosis is made X 100%

Denominator **:** Total number of Acute Myocardial Infarction patients admitted and who received Thrombolytic Therapy.

Target **:** 90%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)

Indicator 04 : Percentage of patient who received thrombolytic therapy (TT) in patients admitted for Acute Myocardial Infarction

Rationale : This indicator was selected because:

- Acute Myocardial Infarction is a frequent cause of hospital death nationally.
- It is important to measure the quality of care and adherence to practice guidelines.

Definition of Terms:

Thrombolytic Therapy:

Thrombolytic Therapy (TT) is widely used to treat Acute Myocardial Infarction (AMI) to open up an acutely occluded artery. Thrombolytic Therapy should be instituted in all patients with AMI presenting within 12 hours of chest pain with no contraindication for receiving TT.

Inclusion Criteria	**:**	All cases with ACUTE MYOCARDIAL INFARCTION (AMI) with indications for Thrombolytic Therapy.	
Exclusion Criteria	**:**	NA	
Type of Indicator	**:**	**Rate Based Process Indicator**	
Numerator	**:**	Number of AMI patients who were admitted and received Thrombolytic Therapy	X 100%
Denominator	**:**	Total number of AMI patients who were admitted with no contraindications for TT	
Target	**:**	90%	
Data Collection	**:**	Monthly	
Comments/Review	**:**		

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)

Indicator 05 : Rate of "Normal" Diagnostic Coronary Angiogram

Rationale : This indicator was selected because:

- Coronary Angiogram is a frequent investigation to diagnose Coronary Artery Disease
- This indicator measures clinical effectiveness.

Definition of Terms:

1. Coronary Angiogram:

Coronary Angiogram is used to diagnose and/or treat various heart conditions. Doctors may recommend this procedure for a number of different reasons. The most common reason is to evaluate chest pain. Chest pain can be a symptom of coronary artery disease (CAD), and coronary angiogram can show whether plaque is narrowing or blocking the heart's arteries.

2. "Normal" Coronary Angiogram

"Normal" findings from a coronary angiogram will indicate mild (<30%) or no stenosis of the coronary arteries.

Inclusion Criteria **:** All patients who had undergone coronary angiogram.

Exclusion Criteria **:** NA

Type of Indicator **:** **Rate Based Process Indicator**

Numerator	**:**	Number of patients who had coronary angiogram done and found 'normal'	x100%
Denominator	**:**	Total number of patients who had coronary angiogram done	

Target	**:**	<5%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)

Indicator 06 : Major Complication Rate during Diagnostic Coronary Angiogram

Rationale : This indicator was selected because:

- Chest pain can be a symptom of coronary artery disease (CAD), and coronary angiogram can show any stenosis or occlusion of coronary arteries.
- Coronary angiogram test does involve some risks. This indicator measures the clinical effectiveness of care and competency of the healthcare professional.

Definition of Terms:

1. Diagnostic Cardiac Catheterization:

Diagnostic Cardiac Catheterization is used to diagnose and/or treat various heart conditions. Doctors may recommend this procedure for a number of different reasons. The most common reason is to evaluate chest pain. Chest pain can be a symptom of coronary artery disease (CAD), and cardiac catheterization can show whether plaque is narrowing or blocking the heart's arteries.

2. Complications from diagnostic cardiac catheterization:

Similar to all surgical procedures, the cardiac catheterization test does involve some risks. Major complications that may occur during the procedure include:

- Death
- Acute Myocardial Infarction
- Stroke

Inclusion Criteria **:** All patients who had cardiac catheterization done

Exclusion Criteria **:** NA

Type of Indicator **:** **Rate Based Output Indicator**

Numerator	**:**	Number of patients who had major complications during / and within 24 hours after diagnostic coronary angiogram.	X100%
Denominator	**:**	Total number of patients who had diagnostic coronary angiogram done	

Target **:** <1%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)

Indicator 07 : Major Complication Rates during Percutaneous Coronary Intervention

Rationale : This indicator was selected because:

- Percutaneous Coronary Intervention is frequently used to treat significant lesions in patient with Coronary Artery Disease.
- This indicator measures the clinical effectiveness of care and competency of the healthcare professional.

Definition of Terms:

1. ***Percutaneous Coronary Intervention;***

   Percutaneous Coronary Intervention is used to treat significant Coronary Artery Disease. These specialized catheters include balloon catheters and devices that can open up narrowed arteries which include stents, rotablator, etc

2. ***Major Complications from Percutaneous Coronary Intervention include:***

   - Death
   - Acute Myocardial Infarction
   - Stroke

Inclusion Criteria **:** All patients who had Percutaneous Coronary Intervention done

Exclusion Criteria **:** *NA*

Type of Indicator **: Rate Based Output Indicator**

Numerator	**:**	Number of patients who had major complications during / and within 24 hours after Percutaneous Coronary Intervention	X100%
Denominator	**:**	Total number of patients who had Percutaneous Coronary Intervention done	

Target **:** <1%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 09E: CLINICAL SERVICES (CARDIOLOGY)=

Indicator 08 : Percutaneous Coronary Intervention (PCI) within 90 minutes after hospital arrival " Door to Balloon" Time

Rationale : This indicator was selected because:

- Acute Myocardial Infarction is a frequent cause of hospital death nationally.
- This indicator measures clinical effectiveness

Definition of Terms:

1. Primary Percutaneous Coronary Intervention (PCI)*:*

Commonly known as coronary angioplasty or simply angioplasty, is a non-surgical procedure used to treat the stenotic (narrowed) coronary arteries of the heart found in coronary heart disease. PCI is usually performed by an interventional cardiologist***.***

2. Percutaneous Coronary Intervention (PCI)*:*

Percutaneous Coronary Intervention is a specific term for opening up totally occluded arteries in Acute Myocardial Infarction. Primary PCI is performed within 90 minutes after the arrival of the patient at the hospital's emergency department

Inclusion Criteria **:** All cases with ACUTE MYOCARDIAL INFARCTION with indications for Primary PCI

Exclusion Criteria **:** NA

Type of Indicator **: *Rate Based Process Indicator***

Numerator **:** Number of Acute Myocardial Infarction patients who had primary PCI done within 90 minutes after hospital arrival X 100%

Denominator **:** Total number of Acute Myocardial Infarction patients admitted and had primary PCI done

Target **:** 90%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 09F: CLINICAL SERVICES (ONCOLOGY)			
There is tracking and trending of specific performance indicators which include but not limited to at least three (3) of the following:			
No.	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Number of mortality/morbidity audits/meetings being conducted in the department with documentation of cases discussed		6 Monthly
2.	Percentage of patients developed extravasation during chemotherapy treatment	< 5%	6 Monthly
3.	Percentage of Medication Errors (from prescription to administration)		Monthly

SERVICE STANDARD 09F: CLINICAL SERVICES (ONCOLOGY SERVICES)

Indicator 01 : Number of mortality and morbidity audits/meetings being conducted in the department with documentation of cases discussed

Rationale : This indicator was selected because:

- The main purpose of the mortality and morbidity meetings is to improve patient management and quality of care. Regular mortality and morbidity meetings serve to look at the weakness and the shortfalls in the overall management of patients, hence it will be learnt and the same mistake could be prevented and would not be repeated in the future.

Definition of Terms:

1. ***Morbidity Audits/Meetings:***

Discussion of case management in regards to patient morbidity, incidence reporting, issue of patient safety, clinical audit (at the department/hospital level).

2. ***Mortality Meeting:***

Discussions related to the management of the case and cause of death of the patient at department/hospital level.

3. ***Documentation:***

Official minutes or notes taken during the meeting with attendance list(certified by the Hospital Director/ Person-In Charge (PIC)

Inclusion Criteria **:** All Morbidity and /or Mortality meetings being conducted at the hospital level.

Exclusion Criteria **:** Time period when the hospital was unable to function as usual due to mass casualty/disaster/crisis

Type of Indicator **: This is a Process indicator**

Numerator : Number of documented mortality and morbidity meetings that were conducted in six (6) months

Target :
Data Collection : 6 Monthly
Comments/Review :

SERVICE STANDARD 09F: CLINICAL SERVICES (ONCOLOGY SERVICES)

Indicator 02 : Percentage of patients developed extravasation during chemotherapy treatment

Rationale : This indicator was selected because:

- Extravasation is a grave complication of chemotherapy miss-delivery and can lead to devastating effects on the patient.
- The aim of this indicator is to ascertain that chemotherapy delivery is being monitored by the specialists through continuing medical education and dissemination of knowledge about chemotherapy delivery to all stakeholders involved with the patient.
- It is an indirect measurement of adherence to stipulated chemotherapy delivery guidelines essential to ensure safe practice, provide evidence based care and increase awareness amongst healthcare givers.

Definition of Terms:

1. Chemotherapy Treatment:

All types of intravenous administration of chemotherapeutic agents.

2. Extravasation:

Inadvertent infiltration of chemotherapy preparations and fluids into the subcutaneous or subdermal tissues surrounding the intravenous administration site. The accidental leakage of cytostatic/vesicant agents into the perivascular tissues may have devastating short-term and long-term consequences for patients. In recent years, the increased focus on chemotherapy extravasation has led to the development of international guidelines that have proven useful tools in daily clinical practice.

Inclusion Criteria : 1. Only hospitals with resident oncologists are included.
2. All patients that were given intravenous chemotherapy including patients with chemoport access
3. Grade 3 or 4 of extravasation at any point during the Chemotherapy treatment

Exclusion Criteria **:** Patients whose chemotherapy is given in hospitals where there is only a visiting oncologist

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Numbers or frequency of extravasation during chemotherapy treatment X100%

Denominator **:** Total number of chemotherapy infusions (including via Chemoport)

Target **:** < 5%
Data Collection **:** 6 Monthly
Comments/Review **:**

SERVICE STANDARD 09F: CLINICAL SERVICES (ONCOLOGY SERVICES)

Indicator 03 : Numbers of Medication Errors (from prescription to administration)

Rationale : This indicator was selected because:

- The occurrence of medication error/misadventure in the delivery of chemotherapy is a potentially preventable serious adverse event where there is much pain and suffering or temporary/permanent disability or even death.

- The occurrence of medication error in chemotherapy can lead to devastating effects on the patient. The large amount of medications used for infusion as well as the availability of new and potent chemotherapy requires further enhancement on the awareness on medication safety.

Definition of Terms:

Medication Error:

"Any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare provider, patient, or consumer. Such events may be related to professional practice, healthcare products, procedures, and systems, including prescribing; order communication; product labeling, packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use.

Inclusion Criteria **:** All patients on chemotherapy drugs (oral & infusion)

Exclusion Criteria **:** NA

Type of Indicator **: Sentinel Event**

Numerator **:** Numbers of medication error made in the process of prescribing, ordering, dispensing, reconstitution and administration of cytotoxic drug

Target **:** 0
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 10: ANAESTHETIC SERVICES			
There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following and this shall include monitoring of pain score upon discharge and one other performance indicator:			
No.	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Mandatory indicator: Pain score on discharge from recovery room should be less than four (4)	100%	Monthly
2.	Number of adverse events following regional anaesthesia, e.g. prolonged motor blockade, inadvertent dural puncture, Local Anaesthetic (LA) toxicity	Downward Trend	Monthly
3.	Number of adverse events following positioning during anaesthesia (peroneal nerve injury following lithotomy positioning)	Sentinel Event	Monthly
4.	Number of patients having prolonged stay in recovery room for more than two (2) hours (sentinel event)	0	Monthly
5.	Patient satisfaction survey with acute pain service and anaesthetic clinic	Upward Trend	6 Monthly
6.	Percentage of cancellation of elective cases after being passed in the anaesthetic clinic	10%	Monthly
7.	Subspecialties units in the Anaesthetic Services, e.g. Obstetrics and Gynaecology Services, cardiac anaesthesia, etc shall monitor any other two (2) indicators to support its goals and objectives.		

SERVICE STANDARD 10: ANAESTHETIC SERVICES

Indicator 01 : Pain score on discharge from recovery room should be less than four (4)

Rationale : This indicator was selected because:

- Post- operative patients should be monitored closely and the pain score should be less than four (4) on discharge from the recovery room as sometimes they may not have adequate pain relief despite being managed by the acute pain team in the wards.

Definition of Terms:

Pain Score :

Measures the patients' pain intensity using the MOH Pain Scale (zero to ten)

Inclusion Criteria **:** All patients who had undergone surgery under general anaesthesia and are resting in the recovery room of the operating theatre

Exclusion Criteria **:** Cases operated under sedation or local anaesthesia administered by surgeons

Type of Indicator **:** ***Rate Based Process Indicator***

Numerator **:** Number of patients with pain score less than four(4)on discharge from the OT Recovery Room for the month

X100%

Denominator : Total number of patients observed and monitored in the OT Recovery Room for the month

Target **:** 100%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 10: ANAESTHETIC SERVICES

Indicator 02 : Number of adverse events following regional anaesthesia, e.g. prolonged motor blockade, inadvertent dural puncture, Local Anaesthetic (LA) toxicity

Rationale : This indicator was selected because:

- The occurrence of adverse events leading to operative complications of regional a naesthesia may indicate less than optimal anesthetic care. Patients should receive adequate and effective regional anaesthesia and analgesia for certain types of surgery.
- Epidural anaesthesia is one of the techniques used for instillation of local anaesthetic into the epidural space to provide anaesthesia.
- This indicator measures the clinical effectiveness of care and safety.

Definition of Terms:

Complications of anaesthesia:

Refers to patients experiencing adverse events following regional anaesthesia both intra and post- operative during or after elective surgery. The types of adverse events may vary but the following to be considered:

i)Prolonged motor blockade following Regional Anaesthesia :

Refers to unexpected prolonged motor and sensory block and delayed recovery following regional anaesthesia. Peripheral nerve blocks enjoy great importance in anaesthesia practice; they can provide safe and effective anaesthesia with long-lasting analgesia.

(ii) Inadvertent dural puncture:

Process whereby epidural needle or catheter accidently punctures the dura at the level of the injection site

iii) Local Anaesthetic (LA) toxicity:

While generally safe, local anesthetic agents can be toxic if administered inappropriately, and in some cases may cause unintended reactions even when properly administered. The toxicity of local and infiltration anesthetics can be local or systemic. Systemic toxicity of anesthetics most often involves the central nervous system (CNS) or the cardiovascular system.

Inclusion Criteria **:** Epidural anaesthesia , Epidural analgesia, Obstetric Analgesia Service, Combine Spinal Epidural (CSE), inclusive of day surgery cases

Exclusion Criteria **:** All general anaesthetic (GA) cases

Type of Indicator **: Rate Based Process Indicator**

Prolonged Motor Blockade

Numerator	**:**	Number of patients who develop prolonged motor blockade	X100%
Denominator	**:**	Total number of patients operated under regional anaesthesia	

Inadvertent Dural Puncture

Numerator	**:**	Number of cases of inadvertent dural puncture	X100%
Denominator	**:**	Total number of cases received epidural anaesthesia/ analgesia and CSE	

Local anaesthesia (LA) toxicity

Numerator	**:**	Number of patients who developed inadvertent dural puncture	X100%
Denominator	**:**	Total number of patients operated under regional anaesthesia	

Target	**:**	Downward Trend
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 10: ANAESTHETIC SERVICES

Indicator 03 : **Number of adverse events following positioning during anaesthesia (peroneal nerve injury following lithotomy positioning)**

Rationale : This indicator was selected because:

- The occurrence of peripheral nerve injuries following positioning during anaesthesia is a reflection of poor patient care. These injuries may produce lasting disability; hence recognition of risks and prevention is essential.
- This indicator measures the clinical effectiveness of care and patient safety. Positioning is the joint responsibility of the surgeon and anesthesiologist.
- Failure to follow professional standards and guidelines may result in positioning injuries and liability.

Definition of Terms:

1. Surgical Positioning

All positioning have 3 goals:

- Maximum exposure to the surgical area while maintaining homeostasis and preventing injury
- Position must provide the Anesthetist with adequate access to the patient for airway management, ventilation, medications, and monitoring
- Promote the enhancement of a satisfactory surgical result

2. Lithotomy Position

Lithotomy position is used for variety of procedures including gynaecological and urological surgery.
With the patient in the supine position, the hips are flexed from the torso so that legs are parallel to it and legs are abducted by 30 -45 degrees to expose the perineal region. The patient's buttocks are even with the lower back in the OR bed (to prevent lumbosacral strain). The legs and feet are placed in stirrups that support the lower extremities. The perineum should be in line with the longitudinal axis of the OR bed.

3. Peroneal Injury

Perioperative peripheral neuropathy refers to postoperative signs and symptoms related to peripheral nerve injury and have been associated with use of the lithotomy position; resulting in peroneal injury with foot drop noted within 24 hours post-operatively.

- Caused by direct pressure on the nerve with the legs in lithotomy position.
- Nerve compressed against neck of fibula
- anesthetists should monitor and assess patient positioning and protective measures at frequent intervals.
- Prevented by adequate padding of lithotomy poles.

Inclusion Criteria	**:**	All patients undergoing surgery in Lithotomy position under General Anaesthesia
Exclusion Criteria	**:**	Pre-existing foot drop prior to surgery
Type of Indicator	**:**	**Sentinel Event**
Numerator	**:**	Number of cases that developed foot drop within 24 hours post-operatively.
Target	**:**	0
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 10: ANAESTHETIC SERVICES

Indicator 04 : Number of patients having prolonged stay in recovery room for more than two (2) hours (sentinel event)

Rationale : This indicator was selected because:

- The occurrence of prolonged stay in the recovery room leading to operative complications of anaesthesia may indicate less than optimal care.
- This indicator measures the clinical effectiveness of care and safety.

Definition of Terms:

Prolonged stay in Recovery Room:

The occurrence of prolonged stay in the recovery room for more than two (2) hours may be multi-factorial. Patients after surgeries are often kept in the recovery room until their condition is stabilized before shifting them to their designated wards. Patients undergoing extensive surgery will require *extended* recovery. A prolonged patient stay in the recovery room is a crucial issue as it creates bottlenecks that may result in the slowing down of the surgical schedule, leading to dissatisfaction for surgeons, nurses, patients, and their families. A medically appropriate length of *stay* in the *recovery room* needs to be defined.

Ref: Prolonged-stay patients in the Post Anaesthesia Care Unit (PACU): A review of the literature. Lalani SB[1], Ali F, Kanji Z.

Inclusion Criteria **:** Patients under regional anaesthesia of general anaesthesia

Exclusion Criteria **:** Patients operated under sedation or local anaesthesia administered by surgeons

Type of Indicator **:** **Sentinel Event**

Numerator **:** Number of patients having prolonged stay in recovery room (>2 hrs) hours

Target **:** 0
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 10: ANAESTHETIC SERVICES

Indicator 05: Patient satisfaction survey with acute pain service and anaesthetic clinic

Rationale *:* This indicator was selected:

- As proxy to measurement of patient- centred services and level of client satisfaction to meeting patient needs for acute pain service and anaesthetic assessment clinic

Definition of Terms :

1. Patient Satisfaction Survey on acute pain service:

Patient satisfaction survey on acute pain service is a measure of a patient's need for the pain service being met by the health care provider/service.

2. Patient satisfaction survey of the anaesthetic clinic:

Is a measure of a patient's need for the anaesthetic services being met by the health care provider/service.

Inclusion Criteria **:** All out-patients and in- patients managed by the Pain Management Team and the Anaesthetic Clinic staff

Exclusion Criteria **:** NA

Type of Indicator **:** Patient Satisfaction Survey

Numerator **:** Numbers of patient satisfaction survey feedback with ≥ 80% satisfaction level

X 100 %

Denominator **:** Total numbers of patient satisfaction survey feedback received

Target **:** Number of patient satisfaction survey feedback with ≥ 80% satisfaction level done every six months (Upward trend)

Data Collection **:** 6 Monthly

Comments/Review **:**

SERVICE STANDARD 10: ANAESTHETIC SERVICES

Indicator 06 : Percentage of cancellation of elective cases after being passed in the anaesthetic clinic

Rationale : This indicator was selected because:

- The effectiveness of the anaesthetic clinic service should reflect in the reduced rate of cancellation for elective surgeries.

Definition of Terms:

Elective Cases

Is defined as planned surgery; patients have been admitted and have been reviewed by the Anaesthetic Team and put on the operating list.

Inclusion Criteria **:**
1. Cancellation by Anaesthetic Team
2. Cancellation due to anaesthetic and/or medical reasons such as uncontrolled diabetes, hypertension, heart disease etc

***Exclusion* Criteria** **:**
1. Lack of ICU bed
2. URTI
3. Lack of OT time
4. Mechanical and electrical problem
5. Operation is cancelled by surgeon

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of elective surgical cancellations after assessment performed in Anaesthetic Clinic

X 100%

Denominator : Total number of pre- operative assessment performed in the Anaesthetic Clinic

Target **:** 10%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 11: OPERATING SUITE SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least three (3) of the following indicators:			
No.	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Mandatory indicator Rate of compliance to Safe Surgery Saves Lives (SSSL) practice		Monthly
2.	Percentage of Elective Operation Cancellation Rate	<10%	Monthly
3.	Percentage of patients awaiting emergency surgery for more than 24 hours due to lack of OT time	<1%	
4.	Number of patients returning to surgery within 24 hours	sentinel event	
5.	Time taken for lower segment caesarean section (LSCS) for fetal distress within 30 minutes of informing operating theatre	sentinel event	
6.	Number of unnecessary delay in starting surgery after induction of anaesthesia due to lack or personnel or equipment	sentinel event	
7.	Number of incidents reported in the operating room		
8.	Number of peri-operative mortality and morbidity review		
9.	Percentage of cases done as day care or Day Of Surgery Admission (DOSA)	30% of all surgeries)	

STANDARD 11: OPERATING SUITE SERVICES

Indicator 01 : Rate of compliance to Safe Surgery Saves Lives (SSSL) practice

Rationale : This indicator was selected because:

- The 2nd Global Patient Safety Challenge was the safety of surgical care. The goal of the WHO Patient Safety Safe Surgery Saves Lives Challenge is to improve the safety of surgical care around the world by defining a core set of safety standards that can be applied in all countries and settings
- While surgical procedures are intended to save lives, unsafe surgical care can cause substantial harm. To assist operating teams in reducing the number of adverse events, WHO Patient Safety has identified ten essential objectives for safe surgery. These were compiled into the WHO Surgical Safety Checklist.
- Using the WHO Patient Safety surgical safety checklist ensures that steps to promote safe surgery are accomplished in a systematic and timely fashion.

Definition of Terms:

1. Safe Surgery Saves Lives (SSSL):

The Safe Surgery Saves Lives programme was established by WHO Patient Safety as part of the World Health Organization's efforts to reduce the number of surgical deaths across the globe. To assist operating teams in reducing the number of these events, WHO Patient Safety—in consultation with surgeons, anaesthetists, nurses, patient safety experts and patients around the world—has identified ten essential objectives for safe surgery. These were compiled into the WHO Surgical Safety Checklist. The aim of this Checklist (available at www.who.int/safesurgery) is to reinforce accepted safety practices and foster better communication and teamwork between clinical disciplines. The Checklist is intended as a tool for use by clinicians in improving the safety of their operations and reducing unnecessary surgical deaths and complications. Its use has been demonstrably associated with significant reductions in complication and death rates in diverse hospitals and settings, and with improvements in compliance to basic standards of care.

Reference; WHO Guidelines for Safe Surgery 2009- Save Surgery Saves Lives

2. Compliance to Safe Surgery Saves Lives (SSSL) practice:

Adherence to the use of WHO Surgical Safety Checklist for all patients undergoing surgery by the operating team.

Inclusion Criteria **:** All cases sent to operating theatre and scheduled for surgery

Exclusion Criteria **:** Cases operated under sedation or local anaesthesia administered by surgeons

Type of Indicator **:** ***This is a Rate Based Process Indicator***

Numerator	**:**	Number of cases where WHO Surgical Checklist was used for each patient that had undergone surgery (evidence of copy of the checklist)	x 100%
Denominator	**:**	Total number of cases operated under General/Regional Anaesthesia in a month	
Target	**:**	100%	
Data Collection	**:**	Monthly	
Comments/Review	**:**		

STANDARD 11: OPERATING SUITE SERVICES

Indicator 02 : Percentage of Elective Operation Cancellation Rate

Rationale : This indicator was selected because:

- Surgical procedure executed as planned reflects on customer satisfaction. Cancellation may lead to patient's disappointment and may jeopardise surgeon- patient rapport.
- This indicator reflects the quality of planning for elective operations in surgical based disciplines.

Definition of Terms:

1. Elective Surgery:

Surgery is planned for the patient by a surgeon

2. Operation Cancellation:

The surgery is cancelled in spite of already in the list for the operating day. Cancellations maybe due to:

- Patients not turning up for surgery
- Inadequate OT time caused by over-listing/interruptions by emergencies
- Surgeon not available, blood not available, elective operations are common. The rates vary depending on how the elective list is prepared.
- No consent, instrument failure and other reasons

Inclusion Criteria **:** All elective surgeries scheduled

Exclusion Criteria **:** Cancellation due to acute medical problems rendering patient unfit for surgery or anaesthesia

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of elective surgery cancelled in the corresponding period

X 100%

Denominator **:** Total number of elective surgery scheduled in the corresponding period

Target **:** < 10%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 11: OPERATING SUITE SERVICES

Indicator 03 : Percentage of patients awaiting emergency surgery for more than 24 hours due to lack of OT time

Rationale : This indicator was selected because:

- Emergency surgery has to be performed as early as possible in order to reduce patient morbidity and mortality as well as potential public complaints.
- This indicator also reflects the timely access and patient centeredness.

Definition of Terms:

1.Waiting time:

From the time the patient is ready for emergency surgery to the time the operation takes place.

Inclusion Criteria **:** Cases with the only reason for delay in Emergency Surgery of more than (>) 24 hours is due to lack of OT Time.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Total number of patients who waited more than (>)24 hours for emergency operation under general anaesthesia due to lack of OT time X 100%

Denominator **:** Total number of emergency surgeries done under general anaesthesia

Target **:** <1%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 11: OPERATING SUITE SERVICES

Indicator 04 : Number of patients returning to surgery within 24 hours

Rationale : This indicator was selected because:

- Any return of patients within 24 hours to the theatre may indicate a quality problem due to occurrence of intra- operative problems that are serious enough to warrant intervention post-operatively.

Definition of Terms:

Returning to surgery within 24 hours:

Unexpected return to the operating theatre within 24 hours of surgery to address a complication of the original operation/surgery.

Inclusion Criteria **:** Elective surgical procedure performed under general anaesthesia

Exclusion Criteria **:** 1. Endoscopy cases
2. Day Care cases

Type of Indicator **:** Sentinel Event

Numerator **:** Number of patients returning to OT/surgery within 24 hours following an elective surgical procedure

Target **:** 0
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 11: OPERATING SUITE SERVICES

Indicator 05 : Time taken for Lower Section Caesarean Section for Grade 1 Level of Urgency (i.e. immediate danger to mother or fetus) within 30 minutes of informing operating theatre

Rationale : This indicator was selected because:

- Good communication is central to timely delivery of the fetus, while avoiding unnecessary risk to the mother. All members of the multidisciplinary team must be informed of the need (or likely need) for caesarean delivery as early as possible, as well as specific instructions on the degree of urgency.
- A target decision-to-delivery interval (DDI) for caesarean section for 'fetal compromise' of 30 minutes is an audit tool that allows testing of the efficiency of the whole delivery team and has become accepted practice; however certain clinical situations will require a much quicker DDI than 30 minutes and units should work towards improving their efficiency.
- Once a decision to deliver has been made, therefore, delivery should be carried out with an urgency appropriate to the risk to the baby and the safety of the mother

Ref: Royal College of Obstetricians & Gynaecologists; Royal College of Anaesthetists: Good Practice No: 11; April 2010.

Definition of Terms:

1. *Lower Section Caesarean Section for Grade 1 Level of Urgency*

Emergency caesarean section (CS) should be undertaken where the health professional concerned suspects maternal or fetal compromise. Guidelines on electronic fetal monitoring recommend that delivery should occur as soon as possible, ideally within 30 minutes taking into account fetal heart rate and maternal factors. Grades:
GRADE 1: Immediate threat to the life of the mother or fetus. Needs to be done within 30 minutes from decision. Paediatrician should be present for in all cases. Examples:

- Prolonged fetal bradycardia,
- Cord prolapse
- Uterine rupture
- APH/abruption
- Cord PH <7.20
- Pathological CTG

2. *Fetal Distress*

Fetal distress occurs when the baby's oxygen supply is compromised in utero, usually during labor but occasionally in the third trimester of pregnancy. Oxygen deprivation can result in decreased fetal heart
rate and can be serious for the baby. The standard of within 30 minutes for fetal distress on informing the operating theatre for a C- Section has become the criterion by which good and bad practice is being defined both professionally and medico-legally. The implication is that caesarean section for fetal distress that takes longer than 30 minutes represents suboptimal or even negligent care.

Inclusion Criteria	**:**	All cases of emergency caesarean sections for fetal distress
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Sentinel Event**
Numerator	**:**	Number of emergency caesarean sections done for fetal distress within 30 minutes of informing the operating theatre in proportion to the number of emergency caesarean sections done that exceeded the standard
Target	**:**	30 minutes
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 11: OPERATING SUITE SERVICES

Indicator 06 : Number of unnecessary delay in starting surgery after induction of anaesthesia due to lack or personnel or equipment

Rationale : This indicator was selected because:

- The occurrence of unnecessary delay in starting surgery after induction of anaesthesia indicates less than optimal care.
- This indicator also reflects timeliness of care and patient centeredness.

Definition of Terms:

1. Delay in starting Surgery

Start time delays in the operating room have a negative effect on its efficiency and the working environment and are signs of an imperfect system. Starting late means considerable wait time for staff, patients and waste of resources.

2. Induction of Anaesthesia

i) The administration of a drug or combination of drugs at the beginning of an anesthetic that results in a state of general anesthesia.

ii) The process of causing general anesthesia by the administration of pharmaceutics.

Ref: Medical-dictionary.thefreedictionary.com/induction of anesthesia

Inclusion Criteria **:** All cases listed for surgery under anaesthesia (general or regional)

Exclusion Criteria **:** All cases undergoing surgery under local anaesthesia administered by the surgeon

Type of Indicator **: Sentinel Event**

Numerator **:** Number of cases with delay in starting surgery after induction of anaesthesia

Target **:** 0
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 11: OPERATING SUITE SERVICES

Indicator 07 : Number of incidents reported in the operating room

Rationale : This indicator was selected as a generic indicator of the delivery of safe patient care because:

- A key component of clinical governance is the responsibility of the head of the operating theatre (OT) to ensure that the service monitors and acts on incidents that can potentially compromise patient safety.
- Incident Reporting ensures sharing of lessons learnt from incidents, root cause analysis and best practices in patient safety.
- Incident Reporting facilitates patient safety efforts including the reduction of risk to patients

Definition of Terms:

1. *Incidents occurring in the operating theatre*

Any deviation from the usual clinical care that causes an injury to the patient or poses risk of harm, that include near misses, errors, preventable Adverse Events and hazards:

- Near Misses - A '*near miss'* is an event that might have resulted in harm but the problem did not reach the patient because of timely intervention by *healthcare* providers or the patient or family, or due to good fortune. *Near misses* may also be referred to as "close calls" or "good catches." (Ref: Institute of *Medicine*, USA)
- Adverse Event - An injury related to medical management rather than complications of disease. Medical management in the operating theatre includes all aspects of care including surgical procedure, wrong patient, wrong surgical site, failure of equipment and the systems used to deliver care. Examples of adverse events include: Respiratory Distress leading to intubation, Cardiac Arrest in the Recovery Room, A stay of > 2 hours in the Recovery Room etc. Adverse events maybe preventable or non- preventable.
- Errors are mishaps that have the potential to cause an adverse event.
- Hazard refers to any threat to safety e.g. unsafe practices, staff conduct, equipment, labels and names.

2. *Incident Reporting :*

An Incident Reporting System refers to the processes and technology involved in the standardization, formatting, communication, feedback, analysis, learning, response and dissemination of lessons learned from reported events; and analysing the incidents scientifically in a structured manner through Root Cause Analysis.

Inclusion Criteria **:** All types of incidents, near misses, adverse events

Exclusion Criteria **:** NA

Type of Indicator **: Sentinel Event**

Numerator **:** Number of incidents (clinical) reported in the operating theatre over a month

Target **:** 0
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 11: OPERATING SUITE SERVICES

Indicator 08 : Number of peri-operative mortality and morbidity review

Rationale : This indicator was selected because:

- The main purpose of the peri- operative mortality and morbidity review is to improve patient management and quality of care.
- Regular peri- operative mortality and morbidity reviews serve to examine the weakness and shortfalls in the clinical care of the patients. These reviews are not punitive and serve to improve management of the patients; hence the same mistakes could be prevented and would not be repeated in the future.

Definition of Terms:

***1. Perioperative Mortality*:**

Is death in relation to surgery. An important consideration in the decision to perform any surgical procedure is to weigh the benefits against the risks. Anesthesiologists and surgeons employ various methods in assessing whether a patient is in optimal condition from a medical standpoint prior to undertaking surgery.

2. Peri-Operative Mortality Review:

Review of all deaths occurring within total length of hospital stay following a surgical or gynaecological procedure performed under general or regional anaesthesia. Also included are deaths in operation theatre before induction of anaesthesia.

***3.* Length of Hospital Stay:**

Is defined as “a hospital admission during the course of which surgery was performed FOR WHATEVER REASON”. Death during this period is considered a `POMR death’ regardless of the period of death from the time of surgery provided it occurs WITHIN THE SAME ADMISSION.

Ref: PERI-OPERATIVE MORTALITY REVIEW MINISTRY OF HEALTH, MALAYSIA.

Inclusion Criteria ***:*** All deaths occurring within total length of hospital stay following a surgical or gynaecological procedure performed under general or regional anaesthesia. Also included are deaths in the operation theatre before induction of anaesthesia.

Exclusion Criteria	**:**	1. Surgery performed elsewhere/during previous admission but patient was admitted and died during the present admission WITHOUT SURGICAL INTERVENTION. 2. Diagnostic and/ or therapeutic procedures carried out by physician and other non- surgeons. 3. Radiological procedures performed solely by the Radiologist without A surgeon's involvement 4. Endoscopy(eg.OGDS/Colonoscopy/ERCP) performed under sedation or/and LA 5. Surgery performed outside OT complex. Eg. Procedure room 6. Obstetric deaths (Pregnancy > 28 weeks). Ectopic pregnancy (< 28 Weeks gestation are included)
Type of Indicator	**:**	**This is a Process Indicator**
Numerator	:	Number of peri- operative mortality and morbidity reviews in six (6) months
Target	**:**	
Data Collection	**:**	6 Monthly
Comments/Review	**:**	

SERVICE STANDARD 11: OPERATING SUITE SERVICES

Indicator 09 : Percentage of cases done as day care or day of surgery admission (DOSA)

Rationale : This indicator was selected because:

- This indicator measures the use of appropriate resources in the hospital for surgery

Definition of Terms:

Day Care/ Day of surgery admission (DOSA)

Day surgery or Day of surgery admission (DOSA) describes the process whereby patients are admitted to hospital and have surgery, and discharged home on the same day. Hospital management has embraced the concept of DOSA. If the DOSA policy is to continue it is imperative that an adequate preoperative assessment clinic is established to prevent negative outcomes for our patients.

Inclusion Criteria **:** All surgeries done (day care cases & inpatients)

Exclusion Criteria **:** NA

Type of Indicator **:** Rate Based Process Indicator

Numerator **:** Total number of surgeries done as day care/ DOSA in the month

X 100%

Denominator **:** Total number of surgeries (inpatients & DOSA) done in a month

Target **:** 30% of all surgeries
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 12: AMBULATORY CARE SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two(2) of the following:			
No.	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Unplanned admissions of Ambulatory Care patients as in-patients (Sentinel Event)	0	Monthly
2.	Cancellation Rate of Ambulatory Care Cases		Monthly

SERVICE STANDARD 12: AMBULATORY CARE SERVICES

Indicator 01 : Unplanned admissions of Ambulatory Care patients as inpatients (Sentinel Event)

Rationale : This indicator was selected because:

- Ambulatory Care patients are usually more stable and can be treated on an out- patient basis. Proper screening and selection of the patient with set criteria should be a prerequisite to select patients for Ambulatory Care.
- This indicator can be used to assess the quality of Ambulatory Care services by the number of unplanned admissions as inpatients.
- Generally, patients receiving safe clinical services as per protocol unless due to patient factor should not be subjected to unplanned admissions, which is a sentinel event.

Definition of Terms:

1. Ambulatory Care*:*

Health services or acute care services that are provided on an outpatient basis e.g. Endoscopy Services, Day Surgery, Medical Day Care, Paediatric Day Care for Thalasemia cases etc.

2. Unplanned Admission:

Admission of Ambulatory Care cases as in- patients that was not planned for during initial screening. Admitted to any clinical discipline/ward regardless of length of stay and diagnosis that was unplanned.

Inclusion Criteria **:** All types of Ambulatory Care registered patients within the ambulatory care unit.

Exclusion Criteria **:** Patients who request for admission for varying reasons e.g. for purpose of insurance claims.

Type of Indicator **: Sentinel Event**

Numerator : Number of unplanned admissions of Ambulatory Care patients as in patients.

Target **:** Sentinel Event
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 12: AMBULATORY CARE SERVICES

Indicator 02 : Ambulatory Care Cases cancellation rate

Rationale : This indicator was selected because:

- This indicator reflects the quality of planning for Ambulatory Care procedures.
- The cancellation of cases listed for elective procedures is common. The rates vary depending on how the list and patients have been prepared.
- Proper screening and selection of the patient with set criteria should be a prerequisite to select patients for Ambulatory Care.

Definition of Terms:

Case Cancellation:

Cases listed on the Ambulatory Care list but the procedure is not done on that particular schedule. Cancellations maybe due to:

- Patients not turning up for procedure/surgery
- Patients found unfit for procedure/surgery on the day of surgery
- Inadequate Operating Theatre time caused by over-listing, interruptions by emergencies or inefficiency related
- Surgeon not available, no consent, instrument failure and other less common reasons

Inclusion Criteria **:** All types of Ambulatory Care registered patients within the Ambulatory Care Unit.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator : Number of Ambulatory Care patients scheduled for surgery/procedure and cancelled X 100%

Denominator : Total Number of Ambulatory Care patients scheduled for surgery/procedures

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 13: CRITICAL CARE (ICU/CCU/CICU/CRW/HDU/BURNS CARE UNIT)			
There is tracking and trending of specific performance indicators which include but not limited to at least three (3) of the following:			
No.	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Rate of pressure ulcers	< 3%	Monthly
2.	Rate of unplanned extubation	<3%	Monthly
3.	Rate of Ventilator Associated Pneumonia (VAP)	< 10 per 1000 ventilator days	Monthly
4.	Rate of Catheter Related Blood Stream Infection	<5 per 1000 catheter days	Monthly
5.	Compliance rate to hand hygiene	> 75%	Monthly
6.	For Level 2 & 3 Care, standardized mortality ratio and benchmarking with other Units		6 Monthly

SERVICE STANDARD 13: CRITICAL CARE (ICU/CCU/CICU/CRW/HDU/BURNS CARE UNIT)

Indicator 01 : Rate of Pressure Ulcers

Rationale : This indicators was selected because:

- Pressure ulcers/sores result in patient discomfort, increased length of stay, morbidity and mortality
- This indicator looks at patient safety and measures the quality of nursing care.

Definition of Terms:

Pressure Ulcer/Sore:

Pressure ulcer/sore is defined as a localized injury to the skin and/or underlying tissue usually over the bony prominence as a result of pressure or pressure in combination with shear and/or friction. It is a circumscribed area in which cutaneous tissue has been destroyed and there is progressive destruction of underlying tissue caused by interference with circulation and nutrition to the area. Signs include blister or broken skin or sore formation over pressure areas (redness is excluded).

Inclusion Criteria **:** All patients who develop new pressure ulcers during their stay in the critical care unit (including those with pre-admission pressure sores which have worsened during the stay in critical care unit)

Exclusion Criteria **:** All patients with pre- admission pressure sores which have become better

Type of Indicator **: Rate Based Process Indicator**

Numerator	**:**	Number of patients who developed new pressure ulcers (including those with pre-admission pressure sores which have worsened) during their stay in the critical care unit in the month	X 100%
Denominator	**:**	Total number of patients admitted to the critical care unit during the month	

Target	**:**	< 3%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 13: CRITICAL CARE (ICU/CCU/CICU/CRW/HDU/BURNS CARE UNIT)

Indicator 02 : Rate of unplanned extubation

Rationale : This indicator was selected because:

- Unplanned extubation in the critical care unit is associated with increased risk of re-intubation, aspiration pneumonia and ventilator associated pneumonia.
- This indicator measures patient safety and quality of care.

Definition of Terms:

Unplanned Extubation: *(UEX)*

Unplanned extubation refers to unintended or accidental dislodgement or removal of endotracheal or tracheostomy tube from the trachea by the patient or staff. Simple measures should be adopted to minimize the incidence of UEX and its related complications: more vigilance during procedures at patients' bedsides, appropriate management of agitated patients, strong fixation of the tracheal tube, attention to the oral endotracheal tube in terms of anchorage and level of tube, and daily assessment of the possibility of weaning from the ventilator.

Inclusion Criteria **:** All patients who are on invasive ventilator

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator : Number of unplanned extubation in the Critical Care Unit

X 100%

Denominator : Total number of patients invasively ventilated in the Critical Care Unit

Target **:** <5%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 13: CRITICAL CARE (ICU/CCU/CICU/CRW/HDU/BURNS CARE UNIT)

Indicator 03 : Rate of Ventilator Associated Pneumonia

Rationale : This indicator was selected because:

- Ventilator-associated pneumonia (VAP) is a complication in invasively ventilated patients which carries high morbidity and mortality. Ventilator Care Bundle (VCB) is a set of 4 evidence-based interventions to reduce the incidence of VAP. The 4 interventions are:
  - Head of bed elevation> 30 degrees
  - Use of stress ulcer prophylaxis
  - Use of deep vein thrombosis prophylaxis
  - Daily sedation vacation

- This indicator measures patient safety and quality of care.

***Definition of Terms*:**

Ventilator-associated pneumonia

Ventilator-associated pneumonia is defined as pneumonia occurring more than 48 hours of invasive mechanical ventilation. Patients who have been ventilated before admission should be determined if they have ventilator-associated pneumonia. Those patients who have ventilator-associated pneumonia on admission to a critical care unit are excluded.

Inclusion Criteria : All invasively ventilated patients who developed ventilator-associated pneumonia after 48 hours of ventilation

Exclusion Criteria : All patients who have been ventilated before ICU admission and are diagnosed to have developed ventilator-associated pneumonia on admission to the critical care unit

Type of Indicator **: Rate Based Output Indicator**

Numerator **:** Number of patients who developed ventilator associated pneumonia in the Critical Care Unit in the month x100%

Denominator **:** Total number of patient ventilated days in the month

Target **:** < 10 per 1000 ventilator days
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 13: CRITICAL CARE (ICU/CCU/CICU/CRW/HDU/BURNS CARE UNIT)

Indicator 04 : Rate of Catheter Related Blood Stream Infection

Rationale : This indicator was selected because:

- Catheter-related bloodstream infection (CRBSI) represents a serious complication in a critical care unit and is potentially lethal. Central venous catheter care bundle consists of 5 evidence-based interventions as having the greatest effect on the rate of CRBSI and the lowest barrier to implementation. The 5 interventions are:
  - Hand hygiene
  - Maximal barrier precautions upon insertion
  - Chlorhexidine skin antisepsis
  - Optimal catheter site selection, with subclavian vein as the preferred site of non-tunneled catheters
  - Daily review of line necessity with prompt removal of unnecessary lines
- This indicator measures patient safety and quality of care.

Definition of Terms:

Catheter Related Blood Stream Infection (CRBSI):

Catheter Related Blood Stream Infection (CRBSI) is defined as bacteremia/fungemia in a patient with a central catheter for more than 48 hours. The following criteria must be met before the diagnosis of CRBSI is made:

1. The catheter must be in use for more than 48 hours
2. Patients have clinical signs of sepsis
3. Blood culture taken from the catheter and a peripheral vein grow the same organsims
4. There is no apparent source for the bloodstream infection except the catheter

Inclusion Criteria **:** All patients with central venous catheter/s in the critical care unit

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Output Indicator**

Numerator **:** Number of patients who developed catheter-related blood stream infection

Denominator **:** Total number of patients with central venous catheter/s in the critical care

x 100 %

Target **:** <5 per 1000 catheter days
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 13: CRITICAL CARE (ICU/CCU/CICU/CRW/HDU/BURNS CARE UNIT)

Indicator 05 : Compliance rate to hand hygiene

Rationale : This indicator was selected because:

- Healthcare Associated Infection (HAI) is a significant problem in hospitals and has an impact on the safety of patient, staff and visitor.
- The Hospital Infection and Antibiotic Control Committee (HIACC) must undertake intense surveillance of all staff including staff of contracted services to ensure the effectiveness of the hospital's Prevention and Control of Infection programme as well as the implementation of WHO Patient Safety Solution on 'Improved Hand Hygiene to Prevent Healthcare Associated Infections'
- Compliance to Hand Hygiene should be compulsory rather than optional for all relevant staff to avoid transmission of harmful germs and prevent healthcare associated infections.

Definition of Terms:

1. Hand Hygiene:

Any action of hygienic hand antisepsis in order to reduce transient microbial flora (generally performed either by hand rubbing with an alcohol-based formulation or handwashing with plain or antimicrobial soap and water).

2. Compliance to Hand Hygiene:

Hand hygiene (HH) is the single most important factor in the prevention of healthcare associated infections. The 3 most frequently reported methods of measuring HH compliance are: (1) direct observation, (2) self-reporting by health care workers (HCWs), and indirect calculation based on HH product usage. A compliance audit is a comprehensive review of staff adherence to regulatory guidelines/ protocols/directives/initiatives etc.

3. The Opportunity:

Is an accounting unit for action; it determines the need to perform hand hygiene action, whether the reason (the indication that leads to the action) be single or multiple.

Inclusion Criteria	**:**	All staff including specialists, medical officers, house officers, nursing staff, allied health staff and students (undergraduate and post graduate medical students, student nurses and students of allied health) and staff of the privatised services (housekeeping, linen service, Facility and Biomedical equipment maintenance services) involved in direct or indirect patient care.
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator.**

Numerator	**:**	Number of hand hygiene actions performed	
Denominator	**:**	Number of opportunities observed	X 100%

Target	**:**	> 75%
Data Collection	**:**	Monthly
Comments/Review	:	Ref: 1. Hand Hygiene Performance " My 5 moments for Hand Hygiene" 2. Technical Specification: Performance Indicators For Medical Programme 2012, Medical Development Division Ministry of Health

SERVICE STANDARD 13: CRITICAL CARE (ICU/CCU/CICU/CRW/HDU/BURNS CARE UNIT)

Indicator 06 : For Level 2 & 3 Care, standardized mortality ratio and benchmarking with other Units

Rationale : This indicator was selected because:

- Standardized mortality ratio (SMR) takes into account varying case-mix of different Critical care units and is a useful performance indicator for different units over time.
- SMR also allows benchmarking with other units so as to improve product and service quality

Definition of Terms:

Standardized Mortality Ratio (SMR):

SMR is the ratio of observed deaths in the study group to expected deaths in the general population. This ratio can be expressed as a percentage simply by multiplying by 100. The expected deaths are calculated by a formula which utilizes severity scoring systems e.g SAPS or APACHE. All patients must be scored within 24 hours of admission using SAPS or APACHE to obtain the expected deaths.

The SMR may be quoted as either a ratio or a percentage. If the SMR is quoted as a ratio and is equal to 1.0, then this means the number of observed deaths equals that of expected deaths. If higher than 1.0, then there is a higher number of deaths than is expected.

Inclusion Criteria **: The SMR for all Level 2 & 3 Critical Care Units**

Exclusion Criteria **:** NA

Type of Indicator **: Process Based Indicator**

Target :
Data Collection : Yearly
Comments/Review :

STANDARD 13A: CRITICAL CARE SERVICES (SCN/NICU/PICU/PHDW)			
There is tracking and trending of specific performance indicators which include but not limited to at least two(2) of the following:			
No.	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Rate of central line associated blood stream infection (CLABSI)	Downward Trend	Monthly
2.	Rate of Ventilator Associated Pneumonia (VAP)	Downward Trend	Monthly
3.	Percentage of survival of inborn very low birth weight infants between 1000 –1499 gm birthweight	Facility with neonatologists: >85% Facility without neonatologists: > 80%)	Monthly
4.	Number of mortality/morbidity audits/meetings being conducted in the unit with documentation of cases discussed		6 Monthly

SERVICE STANDARD 13A: CRITICAL CARE SERVICES (SCN/NICU/PICU/PHDW)

Indicator 01 : Rate of central line associated blood stream infection (CLABSI)

Rationale *:* This indicator was selected because:

- Catheter-related bloodstream infection (CRBSI) represents a serious complication in a critical care unit and is potentially lethal. Central venous catheter care bundle consists of 5 evidence-based interventions as having the greatest effect on the rate of CRBSI and the lowest barrier to implementation. The 5 interventions are:
  - Hand hygiene
  - Maximal barrier precautions upon insertion
  - Chlorhexidine skin antisepsis
  - Optimal catheter site selection, with subclavian vein as the preferred site of non-tunneled catheters
  - Daily review of line necessity with prompt removal of unnecessary lines
- This indicator measures patient safety and quality of care.

Definition of Terms:

Catheter Related Blood Stream Infection (CRBSI):

CRBSI is defined as bacteremia/fungemia in a patient with a central catheter for more than 48 hours. The following criteria must be met before the diagnosis of CRBSI is made:

1. The catheter must be in use for more than 48 hours
2. Patients have clinical signs of sepsis
3. Blood culture taken from the catheter and a peripheral vein grow the same organsims
4. There is no apparent source for the bloodstream infection except the catheter

Inclusion Criteria **:** All patients with central venous catheter/s in the critical care unit (SCN/NICU/PICU/PHDW)

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Output Indicator**

Numerator **:** Number of paediatric patients that developed catheter-related blood stream infection

x 100 %

Denominator **:** Total number of paediatric patients with central venous catheter/s in the NICU/PICU

Target **:** Downward Trend
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 13: CRITICAL CARE SERVICES (SCN/NICU/PICU/PHDW)

Indicator 02 : Rate of Ventilator Associated Pneumonia

Rationale : This indicator was selected because:

- Ventilator-associated pneumonia (VAP) is a complication in invasively ventilated patients which carries high morbidity and mortality. Ventilator Care Bundle (VCB) is a set of 4 evidence-based interventions to reduce the incidence of VAP.
- This indicator measures patient safety and quality of care.

Definition of Terms:

Ventilator-associated pneumonia

Ventilator-associated pneumonia is defined as pneumonia occurring more than 48 hours of invasive mechanical ventilation. Patients who have been ventilated before admission should be determined if they have ventilator-associated pneumonia. Those patients who have ventilator-associated pneumonia on admission to a critical care unit are excluded.

Inclusion Criteria : All invasively ventilated patients who developed ventilator-associated pneumonia after 48 hours of ventilation

Exclusion Criteria : All patients who have been ventilated before ICU admission and are diagnosed to have developed ventilator-associated pneumonia on admission to the critical care unit

Type of Indicator **: Rate Based Output Indicator**

Numerator **:** Number of patients who developed ventilator associated pneumonia in the Critical Care Unit(SCN/NICU/PICU/PHDW) in the month

x100%

Denominator **:** Total number of patient ventilated days in the critical care unit (SCN/NICU/PICU/PHDW) in the month

Target **:** Downward Trend
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 13: CRITICAL CARE SERVICES (SCN/NICU/PICU/PHDW)

Indicator 03 : Percentage of survival of inborn very low birth weight infants between 1000 – 1499 gm birthweight

Rationale : This indicator was selected because:

- This group of infants comprises a significant proportion of patients who utilize NICU and special care nursery resources.
- The survival of these infants impacts significantly on the under 5 survival target.

Definition of Terms:

1. ***Very Low Birth (VLBW) :*** **Birth weight below 1500 gm**
2. ***Live Birth*** ***:*** **Born alive**
3. ***Inborn*** ***:*** **Born in the same hospital**

Inclusion Criteria : 1. Inborn infants of birth weight between 1000- 1499 gm
2. Livebirths

Exclusion Criteria **:** Babies born with major/lethal congenital anomalies (LCM)

Type of Indicator **: Rate Based Process Indicator**

Numerator	: Number of inborn livebirths of birthweight between 1000-1499 gm, without lethal congenital malformations, who survive to discharge	X 100 %
Denominator	: Total number of inborn livebirths of birthweight between 1000-1499 gm without lethal congenital malformations	

Target **:** - Facility with neonatologists: >85%
- Facility without neonatologists: > 80%)

Data Collection **:** Monthly

Comments/Review **:**

SERVICE STANDARD 13 A: CRITICAL CARE SERVICES (SCN/NICU/PICU/PHDW)

Indicator 04 : Number of mortality and morbidity audits/meetings being conducted in the department with documentation of cases discussed

Rationale : This indicator was selected because:

- Regular mortality and morbidity meetings among department staff examine weaknesses and shortfalls in the overall management of patients. These meetings are not punitive and serve to improve management of patients.
- Majority of children die below the age of 5 years. Review of all deaths among children will enable healthcare providers to rectify and improve services to children.
- This indicator measures Clinical Effectiveness and Safety in reducing mortality and morbidity.

Definition of Terms:

1. ***Mortality and morbidity audits/meetings:***

Discussion of case management in regards to patient morbidity, incidence reporting, issue of patient safety, clinical audit (at the department/hospital level).

2. ***Mortality Review:***

Discussions related to the management of the case and cause of death of the patient [e.g. Clinical Audit, PMOR, Dengue Mortality, Mortality under 5 years of age (MDG5), Perinatal Mortality Reviews (MDG4), Inquiries] at department/hospital level.

Inclusion Criteria	**:**	Number of mortality & morbidity meetings conducted at department/hospital Level
Exclusion Criteria	**:**	Time period when the hospital was unable to function as usual due to mass casualty/disaster/crisis
Type of Indicator	**:**	**This is a Process Indicator**

Numerator	:	Number of mortality and morbidity meetings in 6 months period

Target	**:**	
Data Collection	**:**	6 Monthly
Comments/Review	**:**	

SERVICE STANDARD 13B: CRITICAL CARE SERVICES (LABOUR DELIVERY SERVICES)

There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following:

No	INDICATOR	TARGET	Reporting Frequency
1.	Incidence of massive Post-Partum Haemorrhage (PPH) of total deliveries should be less than 1% (exclusion criteria : placenta previa and adherence placenta)	< 1%	Monthly
2.	Complication rate from instrumental/vaginal deliveries: incidence of 3rd and 4th degree tears	< 10%	Monthly
3.	Maternal Mortality	Sentinel Event	6 Monthly

SERVICE STANDARD 13B: CRITICAL CARE SERVICES (LABOUR DELIVERY SERVICES)

Indicator 01 : Incidence of massive Post-Partum Haemorrhage (PPH) of total deliveries should be less than 1% of cases delivered in hospital

Rationale : This is an indicator of the quality of obstetric care because:

- The incidence of massive obstetric haemorrhage is reflective of the effectiveness of the management of haemorrhage at delivery. Post-partum haemorrhage occurs in 3-5% of pregnant mothers and is still the leading cause of maternal death in Malaysia.
- The use of this indicator would be reflective of prompt diagnosis and speed of instituting multidisciplinary care.

Definition of Terms:

Massive Post- Partum Haemorrhage (PPH):

Total amount of blood loss of more than 1.5 litres within (≤) 24 hours of delivery. Delivery includes both the vaginal and abdominal routes

Inclusion Criteria **:** All deliveries conducted in the hospital both vaginal and abdominal routes.

Exclusion Criteria **:** Patients with placenta previa and adherent placenta

Type of Indicator **: Rate Based Process Indicator**

Numerator : Number of patients with massive Primary Post-Partum Haemorrhage X 100%

Denominator : Total number of deliveries (all modes of delivery)

Target **:** ≥ 1%

Data Collection **:** Monthly

Comments/Review **:** As PPH remains the leading cause of Maternal mortality, an indicator measuring the effectiveness and efficiency of care in this condition should be measured in all hospitals

SERVICE STANDARD 13B: CRITICAL CARE SERVICES (LABOUR DELIVERY SERVICES)

Indicator 02 : Complication rate from instrumental/vaginal deliveries: Incidence of 3rd and 4th degree tears

Rationale : This indicator was selected because:

- This indicator was selected to ensure good care to the mother and baby during delivery. With effective obstetric care, most of the complications during instrumental delivery can be anticipated and reduced or avoided.
- Obstetric Trauma is a debilitating injury to the patient. The injury of third and fourth degree perineal tears during vaginal delivery may lead to possible long term complications. These types of tears can be prevented/reduced by employing appropriate labour management and care standards

Definition of Terms:

1. ***An instrumental delivery****,* or also called-assisted birth or operative vaginal birth: Is one where a pair of forceps or ventouse is used when the baby needs help to be born.
2. ***3rd and 4th degree perineal tear****:* Refers to incidence of Perineal Laceration /tear following vaginal delivery.
3. ***Complications of instrumental deliveries:***

a) Ventouse (Vacuum):

Maternal: Vaginal laceration due to entrapment of vaginal mucosa between suction cup and foetal head

Foetal Complications: scalp injuries, cephalohaematoma, intracranial haemorrhage, subgaleal haemorrhage, birth asphyxia, retina haemorrhage neonatal jaundice

b) Forceps:

Maternal: Trauma to soft tissue, bleeding from laceration ,trauma to urethra and bladder-fistula, pain

Foetal: Bruising and laceration to the face, injury to the foetal scalp, cephalohaematoma, retina haemorrhage, skull fracture, permanent nerve damage. The risk of shoulder dystocia is increased following instrumental deliveries.

Inclusion Criteria	**:**	Patients who underwent vaginal deliveries in the hospital: • With instrumentation/without instrumentation • Sustained third(3rd) degree and fourth (4th) degree perineal laceration/tear • Complications from instrumental delivery i.e. cephalohaematoma, intracranial haemorrhage etc
Exclusion Criteria	**:**	Patients who delivered outside of the hospital
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Total number of patients with complications from instrumental /vaginal deliveries x100%
Denominator	:	Total number of instrumental/vaginal deliveries

Target	**:**	< 10%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 13B: CRITICAL CARE SERVICES (LABOUR DELIVERY SERVICES)

Indicator 03 : Maternal Mortality

Rationale : This indicator was selected because:

- This indicator reflects maternal health and enables safety considerations in reducing maternal mortality.
- Most maternal deaths are avoidable, as the health-care solutions to prevent or manage complications are well known. All women need is access to antenatal care in pregnancy, skilled care during childbirth, and care and support in the weeks after childbirth. It is particularly important that all births are attended by trained and skilled health professionals, as timely management and treatment can make the difference between life and death. To improve maternal health, barriers that limit access to quality maternal health services must be identified and addressed at all levels of the health system.

Definition of Terms:

Maternal Death

According to the World Health Organization (WHO), **maternal death** is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Generally, there is a distinction between a direct maternal death resulting from complications arising during pregnancy, labour or during the post-partum period. Deaths may result from interventions, omissions, incorrect treatment or from a chain of events resulting from any of the above. The indirect obstetric deaths may result from previous existing disease or diseases, which are aggravated by the pregnancy resulting in her death. An example would be heart disease. Fortuitous deaths are those deaths that occur in a pregnant woman which are unrelated to her pregnancy and may have caused her death even if she were not pregnant.

Inclusion Criteria	**:**	All direct and indirect maternal deaths
Exclusion criteria	**:**	Fatalities during but unrelated to a pregnancy are termed fortuitous maternal deaths.
Type of Indicator	**:**	**Sentinel Event**

Numerator	:	Total number of Maternal Deaths	
Denominator	:	Total number of Live Births	
Remarks	:	Maternal Mortality Rate is expressed as per 100, 000 live births.	X 1000

Target	**:**	Sentinel Event
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	**FACILITY WITH RADIOLOGIST** Percentage of Plain Films/Images Reported by Radiologists		Monthly
2.	Percentage of Normal: i. Magnetic Resonance Imaging(MRI) ii) Computed Axial Tomography(CT) Scans reported by radiologist		Monthly
3.	Percentage of Radiological Examination Errors i.e. wrong marker, use of primary markers, wrong site X-rayed, wrong patient X-rayed		Monthly
4.	Complication rate for Post-Interventional Procedures		Monthly
5.	Perfect, Good, Moderate, Inadequate (PGMI) audits for mammography	≥ 97% for Perfect, Good & Moderate	Monthly
6.	Percentage of patients with significant pneumothorax/haemorrhage requiring intervention following percutaneous interventional procedures in the thorax, abdomen and pelvis	≤10%	Monthly
7.	Percentage of patients with waiting time of ≤60 minutes for commencement of ultrasound examination	≥80%	Monthly
8.	Turnaround time of ≤2 working days for final report of special radiological examination done on inpatients	≥97%	Monthly
9.	Turnaround time of ≤14 days for final report of special radiological examination done on outpatients	≥90%	Monthly

10.	Percentage of patients developed significant contrast media extravasation following CT examination with intravenous (IV) contrast media	<1%	Monthly
1.	**FACILITY WITHOUT RESIDENT RADIOLOGIST** Percentage of x-ray films sent for reporting		Monthly
2.	Percentage of accurate interpretation of x-rays films by medical officers as reported by radiologist [in reference to indicator (i)]		Monthly
3.	Percentage of radiographic errors, i.e. wrong marker, use of primary markers, wrong site x-rayed, wrong patient x-rayed		Monthly

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 01 : Percentage of plain films/images reported by Radiologists

Rationale : This indicator was selected because:

- For radiological examination to have an impact on patient management, the films/images should be reported by radiologists and in a timely manner.

Definition of Terms:

A Radiological Report *:*

Is a clinical and source document that provides interpretation and describes any radiology procedure conducted by a radiologist. The only person who is privileged to prepare and document a radiology report is a qualified physician (radiologist) who has been granted specific clinical privileges in that hospital or clinical settings. It is an official medical document that provides description and interpretation for any officially requested radiological exam.

Inclusion Criteria **:** All inpatients and out patients undergoing radiological examinations

Exclusion Criteria **:** Cases done when the resident radiologist is not available in the hospital.

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Total number of radiological examinations (plain images and special examination) reported by Radiologist

X 100 %

Denominator **:** Total number of patients undergoing radiological examinations (plain images and special examination)

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 02 : Percentage of Normal:
i) Magnetic Resonance Imaging (MRI)
ii) Computed Axial Tomography (CT) scans

Rationale : This indicator was selected because:

- Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) are special radiological examinations and should be used for the determination of intervention in association with clinical findings.
- This indicator was selected as a generic indicator to assess the appropriate use of high end radiological equipment and special radiological examinations as they have an impact on the cost of medical care.

Definition of Terms:

Normal MRI and CT Scans:

Refers to normal findings in the images of patients undergoing magnetic resonance images and Computed Tomography scans; no abnormalities were detected in the images.

Inclusion Criteria **:** All inpatients and out patients undergoing MRI and CT scans

Exclusion Criteria **:** Cases done when the resident radiologist is not available in the hospital.

Type of Indicator : Rate Based Output Indicator

Magnetic Resonance Imaging (MRI)

Numerator **:** Total number of MRI with normal findings as reported by the Radiologist X 100 %

Denominator **:** Total number of patients undergoing MRI in the same period

Computed Axial Tomography(CT)

Numerator **:** Total number of CT scan with normal findings as reported by the Radiologist X 100 %

Denominator **:** Total number of patients undergoing CT scan in the same period

Target :
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 03 : Percentage of Radiological Examination Errors i.e. wrong marker, use of primary markers, wrong site x-rayed, wrong patient x-rayed

Rationale : This indicator was selected because:

- There is a need for adequate quality control in performing Radiological examinations to ensure the effectiveness of the Radiological Services.
- This indicator is a reflection of the many processes carried out in an imaging department. In a conventional imaging department this indicator has great relevance as it reflects on all the processes namely radiographic techniques, performance of x- ray machines, film processing and storage of films. It also takes into account instances when the radiological examination was not performed according to what was requested by the referring doctor.

Definition of Terms:

Radiological Examination Errors:

Errors in performing Radiological Examinations that include a repeat of plain x-rays and all contrast examinations, CT, MRI, and ultrasound due to wrong marker or use of primary marker, wrong part or wrong view, wrong site or wrong patient.

Inclusion Criteria **:** All radiological examinations that had to be repeated due to the Wrong Part or Wrong View being taken by the radiographer/radiologist.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Output Indicator**

Numerator **:** Total number of radiological examinations that had to be repeated due to wrong part, wrong view, wrong site or wrong patient X-rayed

X 100 %

Denominator **:** Total number of radiological examinations/imaging done in the same period

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 04 : Complication rate for post interventional procedures

Rationale : This indicator was selected because:

- Commonly performed interventional radiological procedures may be associated with morbidity such as pneumothorax and haemorrhage. Thus the morbidity arising from these procedures should be kept to an absolute minimum.
- This indicator addresses the safety of the process of diagnostic procedures in patient management.

Definition of Terms:

1. Radiological Interventional Procedure:

Radiological Interventional Procedures include the performance of biopsy of lung, mediastinum or abdominal organs under image guidance. The first post- procedural chest imaging is defined as occurring from 0-4 hours after the procedure.

2. Post interventional procedural complications:

This refers to unexpected complications of interventional radiological procedures, typically met in the monitoring of patients during and after interventional procedures. Examples are pneumothorax or haemorrhage following percutaneous interventional procedures of the thorax/abdomen/pelvis.

Inclusion Criteria	**:**	All patients undergoing interventional radiological procedures
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Outcome Indicator**

Numerator	**:**	Number of patients with post procedural complications following interventional radiological procedures	X 100%
Denominator	**:**	Total number of patients underwent interventional radiological procedures	

Target	**:**	
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 05 : Perfect, Good, Moderate, Inadequate (PGMI) audits for mammography

Rationale : This indicator was selected because:

- Breast cancer is one of the most frequent cancers among women in both developed and developing countries. In Malaysia breast cancer is the most commonly diagnosed cancer among women of all ethnic groups.
- Mammography remains the most effective screening tool in comparison to clinical breast examination and breast self-examination.
- Radiology and allied professionals in the field of mammography needs to carry out appropriate radiologic practice that is as effective as possible and safe for the patient. Mammography, as in other fields of radiologic practice requires specific training, skills and techniques.
- Image classification in relation to PGMI system maximizes high quality of images and minimizes technical repeats.

Definition of Terms:

1. Mammogram

Mammograms are used as a screening tool to detect early breast cancer in women experiencing no symptoms. They can also be used to detect and diagnose breast disease in women experiencing symptoms such as a lump, pain, skin dimpling or nipple discharge.

2. Perfect, Good, Moderate, Inadequate (PGMI)

PGMI is a method of evaluation of clinical image quality in mammography developed by the United Kingdom Mammography Trainers Group with the support of the Royal College of Radiographers, aimed to ensure the maintenance of a high standard of mammography in Breast Screening and to facilitate a method of external audit.

Inclusion Criteria **:** All mammogram images for breast screening taken in the month

Exclusion Criteria **:** NA

Type of Indicator **:** Audit on Quality of Mammogram images

Numerator **:** Number of mammogram images with PGM results X 100%

Denominator **:** Total number of mammogram images taken in the month

Target **:** ≥ 97% for Perfect, Good & Moderate
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 06 : Percentage of patients with significant pneumothorax/haemorrhage requiring intervention following percutaneous interventional procedures in the thorax, abdomen and pelvis

Rationale : This indicator was selected because:

- Commonly performed interventional radiological procedures may be associated with morbidity such as pneumothorax and haemorrhage. Thus the morbidity arising from these procedures should be kept to an absolute minimum.
- This indicator addresses the safety of the process of diagnostic procedures in patient management.

Definition of Terms:

1. Pneumothorax:
Defined as the presence of air in FIRST post-procedural chest imaging. The first post-procedural chest imaging is defined as occurring from 0-4 hours after the procedure.

2. Significant pneumothorax:
One that requires chest tube insertion.

3. Significant Haemorrhage:
Defined as bleeding requiring fluid resuscitation within (≤) 24 hours of the procedure.

4. Percutaneous Interventional Procedures:
Include the performance of biopsy of lung, mediastinum, pelvis or abdominal organs under image guidance.

Inclusion Criteria **:** All percutaneous interventional procedures performed on organs within the thorax/abdomen/pelvis.

Exclusion Criteria **:** Procedures performed on breasts, superficial lesions and for vascular access.

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of patients with significant pneumothorax/haemorrhage requiring intervention following percutaneous interventional procedures in the thorax, abdomen and pelvis X 100%

Denominator **:** Total number of patients underwent percutaneous interventional procedures in the thorax, abdomen and pelvis

Target **:** ≤10%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 07 : Percentage of patients with waiting time of ≤60 minutes for commencement of ultrasound examination

Rationale : This indicator was selected because:

- Waiting time for patient to undergo an ultrasound examination should be kept to a minimum.
- This indicator measures Patient Satisfaction.

Definition of Terms:

Waiting Time:

Time of appointment/registration (whichever is later) to the time the ultrasound examination is performed

Inclusion Criteria **:** All patients with scheduled appointments

Exclusion Criteria **:** 1. Patients without prior appointments/unscheduled
2. Unprepared cases

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of patients with waiting time of ≤ 60 minutes for commencement of ultrasound examination

X 100%

Denominator **:** Total number of patients commenced ultrasound examination

Target **:** ≥80%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 08 : Turnaround time of ≤ 2 working days for final report of special radiological examination done on inpatients

Rationale : This indicator was selected because:

- For a radiological examination to have any impact on patient management, it should be available to the clinician in a timely manner.

Definition of Terms:

1. ***Turnaround time****:*

The time taken between completion of the examination to the availability of report (not including public holidays and weekend).

2. ***Final Report****:*

Reports that have been verified by a radiologist.

3. ***Special Radiological Examinations****:*

All contrast examinations, CT, MRI, Ultrasound, Mammograms and Angiograms

Inclusion Criteria **:** All special radiological examinations performed on inpatients

Exclusion Criteria **:** Cases done when the resident radiologist is not available in the hospital

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of special radiological examinations performed on inpatients reported within (≤) 2 working days

X 100%

Denominator **:** Total number of special radiological examinations performed on inpatients

Target **:** ≤ 97%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 09 : Turnaround time of ≤14 days for final report of special radiological examination done on outpatients

Rationale : This indicator was selected because:

- For a radiological examination to have any impact on patient management, it should be available to the clinician in a timely manner.

Definition of Terms:

1. ***Turnaround time****:*

The time taken between completion of the examination to the availability of report (not including public holidays and weekend).

2. ***Final Report****:*

Reports that have been verified by a radiologist.

3. ***Special Radiological Examinations****:*

All contrast examinations, CT, MRI, Ultrasound, Mammograms and Angiograms

Inclusion Criteria **:** All special radiological examinations performed on out patients.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator	**:**	Number of special radiological examinations performed on inpatients reported within (≤) 14 working days	X 100%
Denominator	**:**	Total number of special radiological examinations performed on outpatients	

Target	**:**	≤ 90%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility with Radiologist)

Indicator 10 : Percentage of patients developed significant contrast media extravasation following CT examination with intravenous (IV) contrast media

Rationale : This indicator was selected because:

- CT with intravenous (IV) contrast media is a commonly performed procedure in the Department of Radiology.
- Contrast extravasation is a known complication which occurs more frequently with power injection. It may also occur with hand injections.
- Large volumes (usually > 50 mls) of contrast media are known to induce significant tissue damage. However smaller volumes may also have adverse outcomes especially in paediatric patients.
- Contrast media are known to induce significant tissue damage such as:
  a) Skin ulceration
  b) Soft tissue necrosis
  c) Compartment syndrome
- The incidence of contrast media extravasation should be kept to the minimum.

Definition of Terms:

1. Contrast media extravasation:
Contrast leaks into the tissue around the vein where the intravenous needle is inserted.

2. Significant contrast media extravasation:
Volume of > 50mls which necessitate referral to the primary team or volumes not more than 50mls but requiring referral to the primary team.

Inclusion Criteria **:** All CT examinations performed involving intravenous (IV) contrast media.

Exclusion Criteria : 1. Patients with comorbidity that prone to have extravasation
2. History of receiving chemotherapy/Radiotherapy
3. Intravenous Drugs Users (IVDU)
4. Age > 60 years old
5. Emaciated patients
6. Oedematous patients

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of patients developed significant contrast media extravasation following CT examination with intravenous (IV) contrast media

X 100%

Denominator **:** Total number of patients undergo CT examination with intravenous (IV) contrast media

Target **:** <1%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility without Radiologist)			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of x-ray films sent for reporting		Monthly
2.	Percentage of accurate interpretation of x-rays films by medical officers as reported by radiologist [in reference to indicator (i)]		Monthly
3.	Percentage of radiological examination errors i.e. wrong marker, use of primary markers, wrong site X-rayed, wrong patient X-rayed		Monthly

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility without Radiologist)

Indicator 01 : Percentage of X-ray films sent for reporting

Rationale : This indicator was selected because:

- In hospitals without a resident radiologist, only selective films are sent for reporting by the radiologist as per request of the Medical Officer.
- For radiological examination to have an impact on patient management, the films/images should be reported by a radiologist.

Definition of Terms:

X-ray Film Reporting:

This is a clinical interpretation of the radiography film. The only person who is privileged to prepare and document a radiology report is a qualified physician (radiologist) who has been granted specific clinical privileges in that clinical setting. The Radiological Report is an official medical document that provides description and interpretation for any officially requested radiological examinations.

Inclusion Criteria **:** All X- rays done for inpatients and outpatients in the facility

Exclusion Criteria : NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of X- ray films sent for reporting to the Radiologist X 100%

Denominator **:** Total number of X-ray films taken for inpatients and outpatients in the month

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility without Radiologist)

Indicator 02 : Percentage of accurate interpretation of x-rays films by medical officers as reported by radiologist [in reference to indicator (i)]

Rationale : This indicator was selected because:

- In hospitals without a resident radiologist, this indicator reflects the accuracy of the interpretation of the x-ray films by medical officers with reference to the films reported by radiologist.
- For radiological examination to have an impact on patient management, the films/images should be accurately interpreted.

Definition of Terms:

A Radiological Report*:*

A Radiological Report Is a clinical document that provides interpretation to any radiological films/images by a radiologist. The only person who is privileged to prepare and document a radiology report is a qualified physician (radiologist) who has been granted specific clinical privileges in that hospital or clinical settings. It is an official medical document that provides description and interpretation for any officially requested radiological exam.

Inclusion Criteria **:** All x-rays films sent to the radiologist for reporting

Exclusion Criteria : NA

Type of Indicator **: Rate based Process Indicator**

Numerator	**:**	Number of radiological reports (for X- rays films sent for reporting) from the Radiologist that corresponds to the Medial Officers findings	X 100%
Denominator	**:**	Total number of X-ray films sent to the Radiologist for reporting	

Target :
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 14: RADIOLOGY/DIAGNOSTIC IMAGING SERVICES (Facility without Radiologist)

Indicator 03 : Percentage of Radiological Examination Errors i.e. wrong marker, use of primary markers, wrong site x-rayed, wrong patient x-rayed

Rationale : This indicator was selected because:

- There is a need for adequate quality control in performing Radiological examinations to ensure the effectiveness of the Radiological Services
- This indicator is a reflection of the many processes carried out in an imaging department. In a conventional imaging department this indicator has great relevance as it reflects on all the processes namely radiographic techniques, performance of x- ray machines, film processing and storage of films. It also takes into account instances when the radiological examination was not performed according to what was requested by the referring doctor.

Definition of Terms:

Radiological Examination Errors:

Errors in performing Radiological Examinations that include a repeat of plain x-rays and all contrast examinations and ultrasound due to wrong marker or use of primary marker, wrong part or wrong view, wrong site or wrong patient.

Inclusion Criteria	**:**	All radiological examinations that had to be repeated due to the Wrong Part or Wrong View being taken by the radiographer
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	**:**	Number of radiological examinations/ imaging that had to be repeated due to wrong part, wrong view, wrong site or wrong patient X-rayed	X 100%
Denominator	**:**	Total number of radiological examinations/imaging done in the same period	

Target	**:**	
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 15: PATHOLOGY SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Laboratory Turnaround Time (TAT) for urgent Full Blood Count within 45 minutes	> 90%	Monthly
2.	Notification of neonatal serum bilirubin result >300 umol/L within 30 minutes	within 30 minutes	Monthly
3.	Rejection Rate of specimens	<1%	Monthly

SERVICE STANDARD 15: PATHOLOGY SERVICES

Indicator 01 : Laboratory turnaround time (LTAT) for urgent Full Blood Count (FBC) within 45 minutes

Rationale : This indicator was selected because:

- One of the objectives of a haemotology laboratory is to provide fast laboratory results for the management of medical emergency
- Timeliness of the services is the capability of the laboratory providing fast results.
- A fast laboratory turnaround time (LTAT) is desirable and is one of the indicators of efficient laboratory services
- Full Blood Count is a basic and commonly requested test provided in all healthcare facilities
- This indicator measures the clinical effectiveness of care and is expected to reflect the time taken for urgent request for tests and the corresponding results to institute the appropriate care.

Definition of Terms:

1. Laboratory Turnaround Time (LTAT):
Refers to the time the specimen is received in the laboratory to the time the test results is validated and dispatched or available in the system. This should be within the agreed target time and quality objective of the service.

2. Full Blood Count (FBC)*:*
Automated measurement of blood cell parameters.

3. Urgent FBC:
FBC requested as urgent for immediate management of patient or emergency cases

Inclusion Criteria **:** All requests sent for full blood counts (FBC) that are labelled as urgent

Exclusion Criteria **:**
1.Request for non- urgent FBC
2.Request short turnaround time (STAT) not for immediate management of patient or emergency cases
3.FBC done at POCT site

Type of Indicator **: Rated Based Process Indicator**

Numerator **:** Number of urgent Full Blood Count (FBC) with LTAT within (≤) 45 minutes X 100%

Denominator **:** Total number of urgent Full Blood Count (FBC) requested

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 15: PATHOLOGY SERVICES

Indicator 02 : Notification of neonatal serum bilirubin result >300 µmol/L within 30 minutes

Rationale :

This indicator was selected because:

- Neonatal jaundice is a common medical condition in newborn babies. High levels of unconjugated bilirubin may lead to acute and chronic bilirubin encephalopathy if appropriate treatment is not promptly instituted. Prolonged hyperbilirubinaemia in neonates may cause neurodevelopmental problem including athetoid cerebral palsy, hearing loss and visual impairment. Acute hyperbilirubinaemia can result in kernicterus.
- Active communication of critical results is part of overall responsibilities of patient care in clinical pathology service. Requestor has a responsibility to ensure contact details are clear. Individual laboratory must define their pathway for critical result reporting and define a failsafe system
- This is in line with the Malaysian Patient Safety Goal No. 8 which requires critical result to be notified within 30 minutes when is ready to be reported. Failure of timely communication and follow up of critical laboratory values (results) can lead to errors and increased morbidity and mortality.
- Hyperbilirubinaemia 300 µmol/L is indication for urgent medical intervention e.g. exchange transfusion to avoid complication. Therefore it is important to ensure timely critical result communication between the laboratory and the clinician.

Reference: Technical Specifications Key Performance indicators (KPIs) Clinical Services, Medical Programme Version 4.0 2016.

Definition of Terms:

1. ***Critical Result*****:** Test result or value that falls outside the critical limits or the presence of any unexpected abnormal findings which may cause imminent danger to the patient and/or require immediate medical attention.

2. ***Critical Limit:*** Boundaries of low and high laboratory test results beyond which may cause imminent danger to the patient and /or require immediate medical attention.

3. ***Result Verification:*** Means results analysed, confirmed and ready to be reported.

4. ***Neonate:*** Day 1 to day 28 of life

5. ***Notification:*** Any mode of communication e.g. telephone, SMS. All communication must be documented.

Inclusion Criteria	**:**	First sample of neonatal total bilirubin results > 300 µmol/L
Exclusion Criteria	**:**	1. Neonatal total bilirubin results > 300 µmol/L in babies more than 28 days old 2. Neonatal total bilirubin results > 300 µmol/L but the rquesting location (ward or clinic) cannot be identified from the request form. 3. Subsequent sample of neonatal total bilirubin results > 300 µmol/L 4. Unable to contact after 2 attempts within 15 minutes. Results will be reported with the comment.
Type of Indicator	**:**	**Rate Based Process Indicator**
Numerator	**:**	Number of neonatal total bilirubin results > 300 µmol/L notified within 30 minutes after result verification X 100%
Denominator	**:**	Total number of neonatal total bilirubin results > 300 µmol/L
Target	**:**	≥ 95%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 15: PATHOLOGY SERVICES

Indicator 03 : Rejection Rate of Specimens

Rationale : This indicator was selected because:

- There is a need for validity and reliability in performing laboratory testing of specimens to ensure appropriate patient care and effectiveness of the Pathology Services.
- This indicator and has great relevance as it reflects on the processes of collection of specimens and transportation, techniques of testing, performance of machines and processing to obtain accurate and reliable results to provide effective patient care. It also takes into account instances when the specimen was not obtained as per technical instruction for the specific specimen.

Definition of Terms:

Specimens rejected by the laboratory and testing needing to be repeated.

Inclusion Criteria **:** All testing done for in-patients and the testing is done within the same admission.

Exclusion Criteria **:** NA

Type of Indicator **:** ***Rate Based Process Indicator***

Numerator **:** Total number of specimens rejected

X 100%

Denominator **:** Total number of specimens sent for testing in the same period

Target **:** <1%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 16: BLOOD TRANSFUSION SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Cross- Match Transfusion Ratio	≤ 2.0	Monthly
2.	Expiry rates of different blood components -red cell: ≤ 2.5% -platelet concentrates: ≤ 15% -apheresis (platelet or plasma): 0%	red cell: ≤ 2.5% platelet concentrates: ≤ 15% apheresis (platelet or plasma): 0%	Monthly
3.	Number of adverse events in donors (adverse donor reactions and seroconversion)		Monthly
4.	Number of Adverse Events in patients [near misses, transfusion errors (incorrect blood component transfused), transfusion reactions, transfusion transmitted infections)	0	Monthly

SERVICE STANDARD 16: BLOOD TRANSFUSION SERVICES

Indicator 01 : Cross- Match Transfusion Ratio

Rationale : This indicator was selected because:

- Cross-match transfusion ratio is an indicator of appropriateness of blood ordering. A ratio of more than 2.5 reflects excessive ordering of blood cross matching tests, thus imposing inventory problems for blood banks, an increase in workload, cost and wastage.
- This indicator is intended to assist in the enhancement of the cost efficiency of cross-matching process, avoid unnecessary additional workload on laboratory personnel and results in better management of blood stocks.
- This indicator has great relevance on the judicial use of blood and blood products which carries high risks when not administered appropriately as well as assesses the performance of the Blood Transfusion Services.

Definition of Terms:

1. Cross- Match:

A compatibility test carried out on patient's serum with donor red blood cells before blood is transfused.

2. Transfusion:

The infusion of crossed- matched whole blood or red blood cell concentrates to the patient.

3. Cross - match transfusion ratio:

A ratio of the number of red blood cell units crossed matched to the number of red blood cell units transfused.

Inclusion Criteria	**:**	All units of packed red blood cells that are cross-matched in the blood bank for potential transfusion.
Exclusion Criteria	**:**	Safe Group O blood given without cross match in an emergency situation.
Type of Indicator	**:**	**Rate Based Process Indicator**
Numerator	**:**	Number of red cell units cross - matched
Numerator	**:**	Number of red cell units transfused
CT Ratio is	**:**	Total number of units cross matched : Total number of units transfused
Target	**:**	≤ 2.0
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 16: BLOOD TRANSFUSION SERVICES

Indicator 02 : Expiry rates of different blood components:
- red cell: ≤ 2.5%
- platelet concentrates: ≤ 15%
- apheresis (platelet or plasma): 0%

Rationale : This indicator was selected because:

- Utilization of donated blood can be fully optimized by preparing blood components from the collected whole blood.
- This indicator reflects safety precautions and standards on the use of blood and blood products which can be life threatening when not administered appropriately.
- This indicator reflects the increasing expectations of safety standards in the blood transfusion services

Definition of Terms:

1. Blood Components:

Therapeutic components of blood (red cell, white cell, platelets, plasma) that can be prepared by centrifugation, filtration and freezing using conventional blood bank methodology.

Inclusion Criteria **:** All units of blood components prepared/kept in the blood bank

Exclusion Criteria **:** NA

Type of Indicator **:** ***Rate based Process Indicator***

1. **Red cell blood component**

Numerator : Number of expired units of red cell blood component
Denominator **:** Total number of units of red cell blood component prepared/available — X 100%

2. **Platelet concentrates**

Numerator : Number of expired units of platelet concentrates blood component
Denominator **:** Total number of units of platelet blood component prepared/available — X 100%

3. **Apheresis platelet or plasma)**

Numerator : Number of expired units of Apheresis (platelet or plasma)
Denominator **:** Total number of units of Apheresis (platelet or plasma) prepared/available — X 100%

Target **:** - red cell: ≤ 2.5%
- platelet concentrates: ≤ 15%
- apheresis (platelet or plasma): 0%

Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 16: BLOOD TRANSFUSION SERVICES

Indicator 03 : Number of adverse events in donors (adverse donor reactions and seroconversion)

Rationale : This indicator was selected because:

- Regular voluntary non- remunerated blood donors are safer source of blood for transfusion as they have lower risk of carrying any agents of blood borne infection.
- Donor safety is of paramount importance during blood donation sessions and is assured, in so far as it can be, by donor selection guidelines, SOPs, adequately trained staff and appropriate facilities. Despite these measures, various adverse events and reactions can and do occur during and after blood donation. These complications can be a negative experience for donors. Hence Blood Centres have a duty of care to minimise the risks to donors.
- This indicator reflects the effectiveness of care of blood donors and the increasing expectations of safety standards and cost.

Definition of Terms:

1. ***Regular Blood Donors****:*

Qualified blood donors who have donated their blood at a minimum frequency of 2 times within two years in the same blood centre.

2. ***Adverse Events/Adverse reactions in Donors:***

Refers to any unintended response in donor from complications related to blood donation. The complications are grouped into two main categories: those with predominantly local symptoms and those with predominantly generalized symptoms. The most common systemic adverse events were fatigue, vasovagal symptoms and nausea and vomiting. The most common arm findings were bruise arm soreness and haematoma. The more serious complications are specific to aphaeresis donations, e.g. citrate reactions, haemolysis, air emboli, allergic reactions to ethylene oxide used in the sterilization of the harness, and thrombocytopenia and protein deficiency from excessive platelet or plasma donations respectively .

Ref: Manual on Adverse events and reactions during blood donation- EU definition.

A surveillance program on blood donor reactions needs to be established especially on seroconversion.

Inclusion Criteria **:** All types of blood donors (e.g. new, regular, relapsed)
Exclusion Criteria **:** Deferred donor due to temporary and permanent deferral.
Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of cases of adverse events in donors reported in a given period of time

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 16: BLOOD TRANSFUSION SERVICES

Indicator 04 : Number of Adverse Events in patients [near misses, transfusion errors (incorrect blood component transfused), transfusion reactions, transfuse transmitted infections)

Rationale : This indicator was selected because:

- Blood transfusion is a complex process which involves several personnel in the blood bank and clinical departments. Transfusion error can occur at any phase of the transfusion chain. It can be divided into 3 phases:
  i. Incidence of sampling and labelling error (clinical departments)
  ii. Incidence of laboratory error
  iii. Incidence of administrative error

- Adverse events related to blood transfusion reflects safety precautions on the use of blood and blood products which can be life threatening and contribute to patient morbidity and mortality when not administered appropriately. Incidences of adverse events related to blood transfusion i.e. near misses, transfusion errors (incorrect blood component transfused), transfusion reactions, transfuse transmitted infections) must be monitored for the purpose of implementing corrective and preventive measures.

- This indicator reflects the clinical effectiveness of care and increasing expectations of safety standards and cost. Patients and family members have high expectations of safety and quality of blood.

Definition of Terms:

Adverse Events related to Blood Transfusion

i. Any untoward occurrence associated with the collection, testing, processing, storage and distribution, of blood and blood components that might lead to death or life-threatening, disabling or incapacitating conditions for patients or which results in, or prolong hospitalization or morbidity.

ii. Outcomes that are not intended or desired to occur as a result of transfusion of blood and blood products that include transfusion errors, transfusion reactions and transfusion transmitted infections. Transfusion errors can arise from mislabeling sample tubes, mislabeling blood packs, donor grouping, patient ABO typing compatibility testing and transcription errors.

Ref: Manual on Adverse events and reactions during blood donation- EU definition.

Inclusion Criteria **:** All patients transfused with blood and blood products
Exclusion Criteria **:** NA
Type of Indicator **: Sentinel Event**

Numerator **:** Number of incidences of blood transfusion related adverse events in patients

SERVICE STANDARD 17: REHABILITATION MEDICINE SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of inpatients with timely establishment of an interdisciplinary Rehabilitation Plan within seven (7) days of admission/referral (MOH is ≤ 5 working days of admission)	≤ 90%	Monthly
2.	Percentage of inpatients receiving timely functional measure assessment within seven (7) days of admission/referral (MOH ≤ 5 days of admission/referral)	≤ 90%	Monthly
3.	Percentage of inpatients with functional measure assessment prior to cessation of patient rehabilitation programme	≤ 90%	Monthly
4.	Percentage of inpatients with length of stay of ≥ 120 days for Spinal Rehabilitation Program	< 20%	6 monthly

SERVICE STANDARD 17: REHABILATION MEDICINE SERVICES

Indicator 01 : Percentage of inpatients with timely establishment of an interdisciplinary Rehabilitation Plan within seven (7) days of admission/referral

Rationale : This indicator was selected because:

- In Rehabilitation Medicine, the Rehabilitation Plan for inpatient care requires a documented and agreed plan that specifies goals, interventions and time frame established via interdisciplinary consultation.
- This indicator reflects Timely Access of Care and Patient Centeredness

Definition of Terms:

1. Rehabilitation Medicine:

May be defined as the multi- and interdisciplinary management of a person's functioning and health. Rehabilitation medicine defines itself with respect to concepts of functioning, disability and health. Assessment and intervention management rely on these concepts may use the WHO International Classification of Functioning, Disability, and Health (ICF) Model of Functioning and Disability and therefore facilitates multidisciplinary responsibility and coordination of interventions.

2.Rehabilitation Plan:

Documented evidence of consultation, communication between the disciplines involved in the rehabilitation plan.

Inclusion Criteria **:** All referral/admission for inpatient rehabilitation care.

Exclusion Criteria **:** All inpatients for rehabilitation care with length of stay of less than Seven working days of admission.

Type of Indicator **: Rate Based Process Indicator**

Numerator	**:**	Number of in-patients established interdisciplinary rehabilitation plan within seven working days of admission	X 100%
Denominator	**:**	Total number of patients admitted/ referred for in-patient rehabilitation care during the specified period of time	

Target **:** ≤ 90%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17: REHABILATION MEDICINE SERVICES

Indicator 02: Percentage of inpatients receiving timely functional measure assessment within seven (7) days of admission/referral

Rationale : This indicator was selected because:

- Rehabilitation Medicine prioritizes function as the objective of service delivery.
- The use of objective measure of function enables assessment of this and subsequent audit of clinical effectiveness of service delivery.

Definition of Terms:

1. Functional Measure Assessment:

Documented evidence of assessment including functional scales e.g. Modified Barthel Index (BMI), Spinal Cord Independence Measure (SCIM), Functional Independence Measure (FIM), Modified Rankin Scale (MRS), Functional Capacity etc.

Inclusion Criteria **:** All inpatients referral/admission for inpatient rehabilitation care.

Exclusion Criteria **:**
1. Patients where there is interruption of rehabilitation care within seven days of admission.
2. Patients with length of stay of less than 7 days of admission

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of inpatients received timely functional measure assessment within ≤ 7 working days of admission/referral X 100%

Denominator **:** Total number of inpatients admitted or referred for rehabilitation care during the specified period of time

Target **:** ≤ 90%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17: REHABILATION MEDICINE SERVICES

Indicator 03 : Percentage of inpatients with functional measure assessment prior to cessation of patient rehabilitation programme

Rationale : This indicator was selected because:

- Rehabilitation Medicine prioritizes function as the objective of service delivery.
- The use of objective measure of function enables assessment of this and subsequent audit of clinical effectiveness o service delivery in adequate discharge planning and minimization of risk of readmission.

Definition of Terms:

1. Functional Measure Assessment:

Documented evidence of assessment including functional scales e.g. Modified Barthel Index (BMI), Spinal Cord Independence Measure (SCIM), Functional Independence Measure (FIM), Modified Rankin Scale (MRS), Functional Capacity etc.

Inclusion Criteria **:** All inpatients referral/admission for inpatient rehabilitation care.

Exclusion Criteria **:**
1. Patients who have an unplanned cessation of in- patient rehabilitation care.
2. All inpatients for rehabilitation care with length of stay of less than 7 days of admission

Type of Indicator **: Rate Based Outcome Indicator**

Numerator	**:**	Number of inpatients with functional measure assessment prior to cessation of inpatient rehabilitation care X 100%
Denominator	**:**	Total number of inpatients who ceased an inpatient rehabilitation care during the specified period

Target	**:**	>90%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 17: REHABILATION MEDICINE SERVICES

Indicator 04 : Percentage of inpatients with length of stay of ≥ 120 days for Spinal Rehabilitation Program

Rationale : This indicator was selected because:

- Length of Stay is a reflection of effectiveness of care delivered to clients within specified criteria.
- This indicator reflects the clinical effectiveness of care and Patient Centeredness.

Ref: Tooth L. Rehabilitation outcomes in traumatic spinal cord injury in Australia: Functional status, length of stays and discharge setting. Spinal Cord 2003 Apr: 41(4): 220- 30

Definition of Terms:

1. Length of Stay:

Period of program commencement until cessation which may include temporary interruptions that should not be more than one week. The number of days the inpatient is hospitalized (LOS), day of admission to day of discharge describes the length of stay in hospital.

2. Spinal Rehabilitation Program:

An individualized, goal directed rehabilitation program that is coordinated by a rehabilitation physician in optimizing functional outcome and or quality of life of the individual with a spinal cord impairment.

Inclusion Criteria **:** All patients admitted for a spinal rehabilitation program

Exclusion Criteria **:** Occurrence of an event/complication that causes interruption of spinal rehabilitation program of 7 days or more.

Type of Indicator **: Rate Based Process Indicator**

Numerator	**:**	Number of patients for spinal rehabilitation program whose length of stay exceeded 120 days	X 100%
Denominator	**:**	Total number of patients for spinal rehabilitation program during the specified period	

Target	**:**	< 20%
Data Collection	**:**	6 Monthly
Comments/Review	**:**	

SERVICE STANDARD 17A: PHYSIOTHERAPY SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Incidence of Burns sustained during delivery of Electrotherapeutic Modalities or Thermal Agents	Sentinel Event	Monthly
2.	Percentage of inpatient referrals seen on time (≤ 24 hours) by the physiotherapist	≥ 85%	Monthly
3.	Rate of positive outcomes from cases referred for chest physiotherapy by Intensive Care Unit		Monthly

SERVICE STANDARD 17A: PHYSIOTHERAPY SERVICES

Indicator 01 : Incidence of Burns sustained during delivery of electrotherapeutic modalities or thermal agents (sentinel event)

Rationale : This indicator was selected because:

- Burns should not occur if a model of good care is followed. The emphasis is on prevention because safety of patients is of utmost importance during the delivery of heat therapy.
- This indicator reflects Safety and Clinical Effectiveness.

Definition of Terms:

1. ***Burns*** *:*

Tissue damage following the application of electro- therapeutic modalities and thermal agents resulting in excessive/latent redness and pain or blistering of skin over the area treated

2. ***Electro-therapeutic Modalities:***

Short wave Diathermy, Microwave Diathermy, Infra Red Ray

3. ***Thermal Agents****:*

Hot packs, Paraffin wax baths

Inclusion Criteria **:** All patients undergoing treatment with the use of electro therapeutic modalities or thermal agents

Exclusion Criteria **:** NA

Type of Indicator **: Sentinel Event**

Numerator **:** Number of incidences of burns sustained during delivery of electrotherapeutic modalities or thermal agents

Target **:** 0
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17A: PHYSIOTHERAPY SERVICES
Indicator 02 : Percentage of inpatient referrals seen on time (≤ 24 hours) by the physiotherapist

Rationale : This indicator was selected:

- To enhance the effectiveness of physiotherapy treatment management.
- To improve patients and clients satisfaction.
- To prevent complications.

Definition of Terms:

1. In-patients:

Patients who are admitted in the ward.

2. Working Days:

Physiotherapy services are available on weekdays i.e. Mondays to Friday or Sunday to Thursday (according to individual states)

Inclusion Criteria **:** All in- patients referred during working days

Exclusion Criteria **:** All in- patients referred during weekends and public holidays

Type of Indicator **:** ***Rate Based Process Indicator***

Numerator **:** Number of in- patients receiving intervention by physiotherapist within 24 working hours

X 100%

Denominator **:** Total number of in- patients referred for Physiotherapy Services

Target **:** ≥ 85%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17A: PHYSIOTHERAPY SERVICES

Indicator 03 : Rate of positive outcomes from cases referred for chest physiotherapy by Intensive Care Unit

Rationale :

This indicator was selected:

- To enhance the effectiveness of physiotherapy treatment management.
- To provide prompt and efficient physiotherapy service and prevent complications

Definition of Terms:

1. Chest Physiotherapy

Chest physiotherapy is the term for a group of designed treatments to improve respiratory efficiency, promote expansion of the lungs, strengthen respiratory muscles and eliminate secretions from the chest. The chest physiotherapy treatments are generally performed by physiotherapists. The purpose of *chest physiotherapy* is to help patients breathe more freely and to get more oxygen into the body. *Chest* physiotherapy includes postural drainage, *chest* percussion, *chest* vibration, positioning, breathing exercises, coughing and suctioning is necessary.

2. Positive Outcome for chest physiotherapy

Clearance of secretions and improved respiratory efficiency is the goal of chest physiotherapy. Positive Outcome of cases refers to an improvement in respiratory function and cough ability. The patient is considered to be responding positively to chest physiotherapy if some, but not necessarily all of these changes occur:

- decreased volume of secretions
- changes in breath sounds
- improved vital signs
- increased oxygen in the blood as measured by arterial blood gas values
- patient reports of eased breathing

Reference: The Free Dictionary By Farlex

Inclusion Criteria **:** All adult patients admitted to ICU and referred for chest physiotherapy

Exclusion Criteria **:**

1. Myocardial instability:
   a. Sytolic BP (≤90mmHg)
   b. Heart Rate (>140/min)
   c. Evidence of acute myocardiac ischemic last 24 hours
   d. Dysrhythmia requiring new anti-dysrhythmic agents last 24 hours
2. Increased ICP >20mmHg
3. Aneurysm
4. Un-stabilized head injury
5. Recent spinal injury/surgery (less than 24 hours)
6. Acute haemorrhage ie APO (Acute Pulmonary Oedema)
7. Pulmonary Embolism before anti - coagulant drugs
8. Active Pulmonary Tuberculosis before anti Tuberculosis drug

Type of Indicator **: Rate Based Outcome Indicator**

Numerator	**:**	Number of patients achieve positive outcomes from physiotherapy intervention X 100%
Denominator	**:**	Total number of patients in ICU referred for Chest Physiotherapy
Target	**:**	75%
Data Collection	**:**	Monthly
Comments/Remarks:		References: 1. Chelsea Critical Care Physical Assessment Tool (CPax) 2010 2. MOH Early Mobility Programme 2013 3. KKM Care Protocol Critically Ill Adults 2003 4. Physiotherapy for Respiratory and Cardiac Problem 1995

SERVICE STANDARD 17B: OCCUPATIONAL THERAPY SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of stroke patients with improvement of Activities of Daily Living (ADL) independence after ADL intervention	75%	6 Monthly
2.	Percentage of patients restored back to their capabilities to perform at least one meaningful occupation* *Occupation may include activity of daily living tasks, work, play, leisure, household tasks etc.	70%	6 Monthly

SERVICE STANDARD 17B: OCCUPATIONAL THERAPY SERVICES

Indicator 01 : Percentage of stroke patients with improvement of Activities of Daily Living (ADL) independence after ADL Intervention

Rationale : This indicator was selected because:

- The rate at which independence level is achieved varies between hospitals. The rate needs to be standardized. There is strong evidence to show that there is significant improvement after ADL intervention among the stroke patients.
- This indicator reflects Clinical Effectiveness and Efficiency

Definition of Terms:

1. ***Stroke****:*

Stroke or cerebro-vascular accident (CVA) is the sudden onset of neurological deficit brought about by vascular injury to the brain. The most typical manifestation of CVA is hemi paresis or hemiplegia (mild weakness or complete paralysis respectively) of the body OPPOSITE to the side of CVA

2. ***Activities of Daily Living (ADL)****:*

Activities related to grooming, bathing, toilet, dressing, feeding, transfer/wheelchair, bowel control, urinary control, walking and climbing stairs.

3. ***Modified Barthel ADL Index****:*

The Modified Barthel ADL Index (MBI) is an international assessment instrument for ADL that is designed to record what a patient does; not what he could achieve and is aimed at recording the degree of independence. (Shah, S 1989). Modified Barthel ADL Index is an assessment of Personal hygiene, bathing self, feeding, toileting, climbing stairs, dressing, bowel control, bladder control, ambulation, wheel chair and transfer from chair/ bed.
Score of MBI from: The International standard of dependency level is shown as follow:
0 - 24 indicates total dependence on others in ADL.
25 - 49 indicates severe dependency
50 - 74 indicates moderate dependency
75 - 90 indicates mild dependency
91 - 99 indicate minimal dependency.
(Shah, S. and Cooper B. 1995)
One treatment session takes 30 minutes. It can be delivered in the ward or in the Occupational Therapy Department

Inclusion Criteria	**:**	1. Stroke patients with score of less than 60% of MBI before intervention. 2. No age limit (Age was not criteria; there is not a significant attribute to ADL independence performance.)
Exclusion Criteria	**:**	1. Stroke patients with score of more than 60% of MBI before intervention 2. Stroke occurring after brain injury or brain tumour 3. Defaulter 4. Patient without good social support
Type of Indicator	**:**	**Rate Based Outcome Indicator**
Numerator	**:**	The total number of STROKE patients who attained a score of 60% and above MBI within 6 months X 100%
Denominator	**:**	The total number of STROKE patients referred to Occupational Therapy
Target	**:**	75% of stroke patient improve in ADL function after occupational therapy intervention
Data Collection	**:**	6 Monthly
Comments/Review	**:**	

SERVICE STANDARD 17B: OCCUPATIONAL THERAPY SERVICES

Indicator 02 : Percentage of patients restored back to their capabilities to perform at least one meaningful occupation* after occupational therapy intervention

Rationale : This indicator was selected because:

- This indicator reflects the effectiveness and appropriateness of ADL intervention of patients based on the Modified Barthel Index (MBI).

Definition of Terms:

Activities of Daily Living*:*

Activities of daily living are activities related to grooming, bathing, dressing, feeding, transfer/wheelchair, bowel control, urinary control, walking and climbing stairs. Modified Barthel ADL Index is an assessment of feeding, grooming, dressing, bowel control, bladder control, transfer, toilet use, walking and climbing stairs. Score of MBI from: The International standard of dependency level is shown as follows:
0 - 24 indicates total dependence on others in ADL.
25 - 49 indicates severe dependency
50 - 74 indicates moderate dependency
75 - 90 indicates mild dependency
91 - 99 indicate minimal dependency.
(Shah, S. and Cooper B. 1995)

**Meaningful* *occupation may include activities of daily living tasks, work, play, leisure, household tasks etc*.

Inclusion Criteria	**:**	All patients referred to the Occupational Therapist for rehabilitation with score of less than 60% of MBI before intervention.
Exclusion Criteria	**:**	i) Patients attained less than 20 sessions of ADL intervention ii) Stroke patients
Type of Indicator	**:**	**Rate Based Outcome Indicator**
Numerator	**:**	Number of patients who improved in ability to perform at least one meaningful occupation after occupational therapy intervention X 100%
Denominator	**:**	Total number of patients referred to Occupational Therapist for intervention
Target	**:**	70% of patients improved in ability to perform at least one Meaningful occupation
Data Collection	**:**	6 Monthly
Comments/Review	**:**	

SERVICE STANDARD 17C: DIETETIC SERVICES			
There tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of in-patient referrals seen on time (24 hours) by the Dietician	≥ 85%	Monthly
2.	Percentage of out-patient referrals seen by the Dietician within the stipulated time by the Dietetic Services and approved by the Facility	≥ 85%	Monthly
3.	Energy intake at least 70% of recommendation within 5 days of enteral nutrition initiation among patients in the ward	≥ 80%)	Monthly

SERVICE STANDARD 17C: DIETETIC SERVICES

Indicator 01 : Percentage of in-patient referrals seen on time (24 hours) by the Dietician

Rationale : This indicator was selected because:

- Dietary consultation and nutrition support services are an integral part of total patient care. The high rate of referrals and limited manpower pose a challenge to the dietician in striving to deliver the services within acceptable time frame; to ensure the provision of appropriate nutrition intervention.
- This indicator reflects Timely Access and Patient Centeredness

Definition of Terms:

Seen on Time/Timely Response*:*

In- patient referrals should be seen within the same day of receiving of referral cases on working days, and for cases referred after 1.00 pm, the patient should be seen before 1.00 pm the following working day.

Inclusion Criteria **:** Patient requiring nutritional intervention:
- Tube feeding
- Combination of tube feeding and parenteral
- Oral liquid Diet only
- Combination of oral and enteral nutrition
- Patient with poor oral intake (intake less than half of food served)

Exclusion Criteria **:**
- Patient referred for dietician consultation only
- Patient referred but discharged without being seen by dietician
- Patient referred but passed away before being seen by dietician

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of in-patients requiring intervention and seen by dietician within 24 hours of referral

X 100%

Denominator **:** Total number of in-patients requiring intervention and seen by dietician

Target **:** ≥ 85%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17C: DIETETIC SERVICES

Indicator 02 : **Percentage of out-patient referrals seen by the Dietician within the stipulated time by the Dietetic Services and approved by the Facility**

Rationale : This indicator was selected because:

- Dietary consultation and nutrition support services are an integral part of total patient care. The high rate of referrals and limited manpower pose a challenge to the dietician in striving to deliver the services within acceptable time frame; to ensure the provision of appropriate nutrition intervention.
- This indicator reflects Timely Access and Patient Centeredness

Definition of Terms:

1. Seen within the stipulated Time:

Out-patient cases referred for intervention by Dietician should be seen within the stipulated time upon receiving of referrals on working days.

2. Stipulated time:

Refers to the agreed time/duration as specified by the Facility within which appointments are given for out-patient referrals to the dietician.

Inclusion Criteria **:** All patients requiring dietary consultation

Exclusion Criteria **:**
- Patient referred for urgent dietary intervention
- Patient referred but discharged without being seen by dietician
- Patient referred but passed away before being seen by dietician

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of out- patient referrals seen by the Dietician within the stipulated time X 100%

Denominator **:** Total number of out-patients referred to the dietician

Target **:** ≥ 85%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17C: DIETETIC SERVICES

Indicator 03 : **Energy intake at least 70% of recommendation within 5 days of enteral nutrition initiation among patients in the ward**

Rationale : This indicator was selected because:

- Nutritional support is an integral part of total patient care. Patients requiring enteral nutrition are ill patients who are unable to take oral feedings due to their health status or provided as a temporary measure in post- surgery to ensure the provision of appropriate nutritional intervention.
- This indicator reflects Clinical Efficiency and Patient Centeredness.

Definition of Terms:

1. Enteral Nutrition:

Enteral nutrition is provided where a patient is fed via an enteral tube. There are several different methods of enteral tube feeding, but most short term tube fed enteral nutrition should be given via a nasogastric tube. Patients for enteral feeding include those with swallowing disorders, such as motor neurone disease, multiple sclerosis, those with physical obstruction to swallowing, such as oesophageal tumours, those unable to ingest food, such as head injury or stroke patients among others.

2. Energy Intake:

Energy intake is the total number of calories taken in daily whether ingested or by parenteral routes. Energy is provided by food and drink. It comes from the fat, carbohydrate and protein the diet contains. Energy requirements vary from one individual to the next, depending on factors such as age, sex, body composition and physical activity level.

Inclusion Criteria **:** All patients in the Facility /Hospital requiring enteral nutrition

Exclusion Criteria **:** NA

Type of Indicator **:** **Rate Based Process Indicator**

Numerator **:** Number of patients receiving enteral nutrition having achieved 70% of the recommended energy intake within 5 days of initiation

X 100%

Denominator **:** Total number of patients on enteral nutrition during the specified period

Target **:** ≥ 80%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17D: SPEECH-LANGUAGE THERAPY SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of new cases outpatient referrals given appointment within 90 days (waiting time between the date patient presents to request for appointment and the initial appointment given within 90 days)	≥85%	Monthly
2.	Percentage of inpatient referrals of swallowing and feeding difficulties responded within 3 working days.	≥85%	Monthly
3.	Percentage of patient satisfaction towards patient education in therapy	≥80%	6 Monthly

SERVICE STANDARD 17D: SPEECH- LANGUAGE THERAPY SERVICES

Indicator 01 : Percentage of new cases outpatient referrals given appointment within 90 days

Rationale : This indicator was selected because:

- Speech- Language Pathology Services consultation and support services are an integral part of total rehabilitative care. The provision of appropriate intervention should be within the acceptable time frame.
- Patient –centred services must give priority to prompt attention to patient needs by reducing the waiting times for consultation. This indicator reflects Timely Access and Patient Centredness.

Definition of Terms:

Waiting Time for new appointment:

Waiting time between the date patient presents to request for appointment and the initial appointment given within 90 days of referral. Time of receiving referral documentation to time of initial appointment given on working days.

Inclusion Criteria **:** All new outpatients referred to Speech Pathologist for consultation or management

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of new outpatient cases given appointment to the Speech – Language Therapist within 90 days of referral X 100 %

Denominator **:** Total number of new outpatient referrals received by Speech- Language Therapist for initial appointment

Target **:** ≥ 85%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17D: SPEECH- LANGUAGE THERAPY SERVICES

Indicator 02 : Percentage of inpatient referrals of swallowing and feeding difficulties responded within 3 working days

Rationale : This indicator was selected because:

- Speech- Language Therapy Services consultation and support services are an integral part of total rehabilitative care and the treatment plan is usually a long term process. The provision of appropriate intervention should be within the acceptable time frame.
- Patients with swallowing and feeding difficulties must be given priority to prompt attention to meet patient's nutritional needs and general wellbeing.
- This indicator reflects Timely Access and Patient Centredness.

Definition of Terms:

1. Swallowing and Feeding Difficulties:

Eating and swallowing problems, known as dysphagia, occur in many medical conditions and can occur both in adults and children. The main risks associated with swallowing problems are:

- **Choking or asphyxiation:** When food blocks the airway, preventing breathing. Also when food or liquid enter the airway below the level of the vocal cords.
- **Aspiration pneumonia**: If food or liquid enter the lungs it can cause a lung infection.
- **Dehydration**: Not drinking enough fluids is bad for health and can lead to problems such as constipation.
- **Malnutrition**: Lack of nourishment leads to poor health and harms the body's ability to fight infection.

Feeding disorders in children include problems gathering food and getting ready to suck, chew, or swallow it. For example, a child who cannot pick up food and get it to her mouth or cannot completely close her lips to keep food from falling out of her mouth may have a feeding disorder.

2. Waiting Time for Speech Therapist Response:

Time between the date the inpatient is referred to the Speech Language Therapist to initial contact/examination within 3 working days.

Inclusion Criteria	**:**	All in-patients referred to Speech – Language Therapist for management of swallowing and feeding difficulties.
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	**:**	Number of in-patients referred and responded within 3 days by Speech Therapist for swallowing & feeding difficulties	X 100 %
Denominator	**:**	Total number of in- patients referred to Speech Therapist for swallowing & feeding difficulties	

Target	**:**	≥ 85%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 17D: SPEECH- LANGUAGE THERAPY SERVICES

Indicator 03 : Percentage of patient satisfaction towards patient education in therapy

Rationale : This indicator was selected because:

- Speech- Language Pathology Services consultation and support services are an integral part of total rehabilitative care.
- As proxy to measurement of patient- centred services and level of client satisfaction to meeting patient needs from registration for out-patient care to care and treatment.

Definition of Terms :

1. Patient Satisfaction Survey *:*

Patient satisfaction is a measure of the extent to which a patient is content with the health care which they received from their health care provider.

2. Patient Education Therapy:

Patient education is an individualized, systematic, structured process to assess and impart knowledge or develop a skill in order to effect a change in behavior. The goal is to increase comprehension and participation in the self-management of health care needs. The patient/family/significant others play an active part in the process. Patient education is an important component of care in both inpatient and ambulatory settings**.** Patient/family education is an interdisciplinary and collaborative process designed to meet the needs of the individual patient throughout the continuum of care.

Ref: UTMB Handbook of Operating Procedures : Policy 9.3.4 Patient/Family Education

Inclusion Criteria **:** All out-patients attending patient education therapy

Exclusion Criteria **:** In- patient satisfaction survey

Type of Indicator **:** Patient Satisfaction Survey

Numerator **:** Number of outpatients given patient education therapy with ≥ 80% satisfaction level

X 100 %

Denominator **:** Total number of outpatients given patient education therapy

Target **:** ≥ 80% patient satisfaction level
Data Collection **:** 6 Monthly
Comments/Review **:**

SERVICE STANDARD 17E: AUDIOLOGY SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of new cases given appointment in audiology clinic following a referral within 45 days	≥ 85%	Monthly
2.	Percentage of patients given hearing aid on trial after diagnosis of hearing loss within (≤) 8 weeks	≥ 80%	Monthly
3.	Percentage of ear impression taking without complications	≥ 90%	Monthly

SERVICE STANDARD 17E: AUDIOLOGY SERVICES

Indicator 01 : Percentage of new cases given appointment in audiology clinic following a referral within 45 days

Rationale : This indicator was selected because:

- Audiology Services consultation and support services are an integral part of total rehabilitative care. The high rate of referrals poses a challenge to the audiologist in striving to deliver the appropriate intervention within the acceptable time frame.
- Patient –centred services must give priority to prompt attention to patient needs by reducing the waiting times for consultation. This indicator reflects Timely Access and Patient Centredness.

Definition of Terms:

Waiting Time for new appointment:

Waiting time between the date patient presents to request for appointment following a referral and the initial appointment given within 45 days. Time of receiving referral documentation to time of initial appointment given on working days.

Inclusion Criteria **:** All new cases referred to the audiologist for screening and intervention.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of new cases given initial appointment to the Audiology Clinic within 45 days of referral

Denominator **:** Total number of new referrals received for initial appointment to Audiology Clinic

Target **:** ≥ 85%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17E: AUDIOLOGY SERVICES

Indicator 02 : Percentage of patients given hearing aid on trial after diagnosis of hearing loss within (≤) 8 weeks

Rationale : This indicator was selected because:

- Audiology Services consultation and support services are an integral part of total rehabilitative care. The provision of appropriate intervention should be within the acceptable time frame.
- Patient –centred services must give priority to prompt attention to patient needs by reducing the waiting times for consultation. This indicator reflects Timely Access and Patient Centredness.

Definition of Terms:

1. Hearing loss:
Deafness, hearing impairment or hearing loss is a partial or total inability to hear.

2. Hearing aid:
A hearing aid is a device designed to improve hearing. Hearing aids are classified as medical devices in most countries, and regulated by the respective regulations. Hearing aid can amplify sound waves in order to help a deaf or hard-of-hearing person hear sounds more clearly and can help a person hear better, but it won't return hearing to normal levels.

3. Time taken between a diagnosis of hearing loss and the initiation of rehabilitation:
Intervention with hearing aid given within (≤) 8 weeks following diagnosis of hearing loss.

4. Rehabilitation Intervention:
Intervention program designed to initiate solutions to listening and communication problems among hearing-impaired individuals. Different steps are taken towards improving the situation; including acquiring hearing aids.

Inclusion Criteria **:** All patients referred to the Audiologist for screening and initiation of intervention
Exclusion Criteria **:** NA
Type of Indicator **: Waiting Time**

Numerator **:** Number of patients given hearing aids on trial within 8 weeks after diagnosis of hearing loss

x 100%

Denominator **:** Total number of patients referred for hearing aid after diagnosis of hearing loss

Target **:** ≥ 80%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17E: AUDIOLOGY SERVICES

Indicator 03 : Percentage of ear impression taking without complications

Rationale : This indicator was selected because:

- Audiology Services consultation and support services are an integral part of total rehabilitative care. The provision of appropriate intervention should be made safe for the patients
- This indicator reflects clinical effectiveness and patient safety.

Definition of Terms:

1. Ear impression:

Ear Impressions are required for any custom fitted product. They will ensure a perfect and therefore comfortable fit, giving the largest amount of ambient attenuation possible but more importantly allowing the person to enjoy a better quality of sound at lower volumes. Any person taking ear impressions must be qualified. They will then perform the procedure correctly and more importantly safely.

2. Complications on taking ear impression:

Possible complications that may arise when taking an ear impression (Dillon, H., 2001)

i. Cerumen impaction
ii. Hematoma of the ear canal or tympanic membrane
iii. Perforation of the tympanic membrane.
iv. Traumatic perforation with perilymph fistula
v. Impact on existing or previous surgical procedures
vi. Exacerbation of certain conditions (e.g. Ménières disease, skin irritations or conditions Withi the external ear or canal)
vii. Filling middle ear with impression material

Inclusion Criteria **:** All patients referred to the Audiology Clinic for taking ear impressions.
Exclusion Criteria **:** NA
Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of patients/clients taken ear impressions at the Audiology Clinic without complications x 100%
Denominator **:** Total number of patients/clients referred to the Audiology Clinic for taking ear impressions.

Target **:** ≥ 90%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17F: OPTOMETRY SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of patients with Waiting Time within 90 minutes to see Optometrist after Registration(within 90 minutes)	80%	Monthly
2.	Percentage of new patients for specialised procedure either low vision or contact lens or binocular assessment that were given appointment for the first consultation within six (6) weeks at optometry clinic.	≥ 80%	Monthly
3.	Percentage of contact lens related corneal ulcer	≤ 0.2%	Monthly

SERVICE STANDARD 17F: OPTOMETRY SERVICES

Indicator 01 : Percentage of patients with Waiting Time within 90 minutes to see Optometrist after Registration

Rationale : This indicator was selected because:

- Patient- centered services must give priority to prompt attention to patient needs by reducing waiting times for consultation.

Definition of Terms:

Waiting Time:

Time of registration/appointment (whichever is later) to the time the patient is first seen by the optometrist. 80 % to be seen within 90 minutes after registration.

Inclusion Criteria	**:**	All out- patients registered at the Optometry/Ophthalmology Clinic and waiting to see the Optometrist.
Exclusion Criteria	**:**	Patients who came without appointment to the Optometry/Ophthalmology Clinic/for consultation with Ophthalmologist
Type of Indicator	**:**	**Rate Based Process Indicator**
Numerator	**:**	Number of patients with waiting time of (≤) 90 minutes to see the optometrist at Optometry /Ophthalmology Clinic after registration x 100%
Denominator	**:**	Total number of patients seen by the optometrist at Optometry/Ophthalmology Clinic
Target	**:**	80%
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 17F: OPTOMETRY SERVICES

Indicator 02 : Percentage of new patients for specialised procedure either low vision or contact lens or binocular assessment that were given appointment for the first consultation within six (6) weeks at optometry clinic.

Rationale : This indicator was selected because:

- Optometry Services consultation and support services are an integral part of total rehabilitative care and generally to assist vision correction/promote good vision in the individual.
- Patient- centered services must give priority to prompt attention to patient needs by reducing waiting times for consultation.

Definition of Terms:

1. New appointment:

New Appointment refers to the initial appointment for new cases referred to the optometrist (first time consultation).

2. Waiting Time:

The waiting time refers to time between the date patient presents to request for appointment following a referral and the initial appointment given within six (6) weeks.

Inclusion Criteria **:** All patients referred to optometrist for specialized procedures (low vision, Contact lens & binocular vision) assessment.

Exclusion Criteria **:** NA

Type of **:** **Rate Based Process Indicator**

Numerator	**:**	Number of patients referred to Optometrist for specialised procedures and given appointment for consultation within 6 weeks	x 100%
Denominator	**:**	Total number of patients referred to optometrist for specialized procedures	

Target **:** ≥ 80%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17F: OPTOMETRY SERVICES

Indicator 03 : Percentage of contact lens related corneal ulcer

Rationale : This indicator was selected because:

- While contact lenses are safely used by millions of people every day, they do carry a risk of eye infection. The most common infection related to contact lens use is infection of the cornea - Keratitis is the most serious complication of contact lens wear. In severe cases, it can lead to corneal scarring that impairs vision, and may lead to the need for a cornea transplant.
- This indicator reflects safe care as even a small percentage of complications can constitute a major public health problem.

Definition of Terms:

1. ***Contact lens–related infection/complications*** - range from self-limiting to sight threatening, which require rapid diagnosis and treatment to prevent vision loss. Factors that contribute to a contact lens-related infection include:

- Use of extended-wear lenses
- Sleeping in your contact lenses
- Reduced tear exchange under the lens
- Environmental factors
- Poor hygiene, including poor maintenance of contact lens cases or reusing or topping off contact lens solution

2. Contact lens related Corneal Ulcer

Corneal ulcer, also known as ulcerative keratitis and infectious keratitis, is most often associated with contact lens use or misuse. Corneal ulcer is essentially an open wound to the eye. It is characterized by disruption of the corneal epithelium and stroma and can be either inflammatory or infectious. Corneal ulcers are debilitating and potentially sight-threatening. A major risk factor for developing a corneal ulcer is overnight use of soft contact lenses, and the risk increases with each consecutive night of continuous wear.

Ref: Contact Lens-Related Corneal Ulcer : A Teaching Case Report : Trinh Khuu, OD, FAAO Aurora Denial, OD, FAAO

Inclusion Criteria	**:**	All cases of contact lens related Corneal Ulcer seen and reported at the Optometrist/Ophthalmology clinic
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Outcome Indicator**

Numerator	**:**	Number of patients with contact lens related corneal ulcer detected by Optometrist	X 100%
Denominator	**:**	Total number of patients (using contact lens) examined by the Optometrist	
Target	**:**	≤ 0.2%	
Data Collection	**:**	Monthly	
Comments/Review	**:**		

SERVICE STANDARD 17G: HEALTH EDUCATION SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Number of patients received behavioural needs assessment (cognitive, affective & psychomotor) prior to health education intervention for any specific chronic Diseases		Monthly
2.	Percentage of patients who Quit Smoking after six (6) months of receiving quit smoking services	20%	6 Monthly
3.	Percentage of patient referrals seen within two (2) weeks	80%	Monthly
4.	Number of in-house health education materials (printed & electronic) production which have been pre-tested accordingly	100%	6 monthly

SERVICE STANDARD 17G: HEALTH EDUCATION SERVICES

Indicator 01: Number of patients received behavioural needs assessment (cognitive, affective & psychomotor) prior to health education intervention for any specific Chronic Diseases

Rationale : This indicator was selected because:

- Behavioural needs assessment prior to Health Education Intervention should be conducted to assess the change in the cognitive, affective and psychomotor behaviour of the clients after Health Education intervention which also measures the effectiveness of Health Education especially for specific chronic diseases.
- Health Education is aimed to educate and encourage patients and community to comply with the treatment regime offered in controlling their diseases and maintaining their wellbeing.

Definition of Terms:

1. Behavioural Needs Assessment

The practice of health education involves three major program-planning activities: needs assessment, program development, and evaluation. Behavioral needs assessment is a method used in the field of psychology to observe, describe, explain, predict and sometimes correct behavior. Behavioral needs assessment can be useful in clinical, educational and corporate settings. Clients receiving behavioral health education are assessed on their knowledge, attitude and practices on specific chronic diseases i.e. diabetes before intervention to gauge changes in behavior after the health education intervention.

2. Health Education Intervention:

Various techniques/activities aimed at change in the cognitive, affective and psychomotor behaviour of the clients/patients in reference to specific chronic disease i.e. diabetes.

Inclusion Criteria **:** Patients receiving health education intervention i.e. patient education for chronic diseases eg. diabetes

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of patients received behavioural needs assessment prior to Health Education Intervention for specific chronic disease e.g. diabetes

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17G: HEALTH EDUCATION SERVICES

Indicator 02 : Percentage of patients who Quit Smoking after six (6) months of receiving Quit Smoking Services

Rationale : This indicator was selected because:

- Smoking has been shown to be hazardous to health, and is a risk for many diseases such as cancers and cardiovascular diseases. In the *National Health and Morbidity Survey (NHMS)* conducted in 2006, it was found that 22.5% of Malaysians aged 18 and over were smokers. Therefore, the Ministry of Health has taken the initiative to continue the Say No to Smoking Campaign that was held on a large scale nationally, initiated in 2004.

- This is in line with the commitments that have been affirmed by the Ministry of Health Malaysia in the 64 th World Health Assembly in May 2011 that is by targeting 60% of patients with cardiovascular disease or at high risk of developing the disease to quit smoking within 6 months of enrolling in a Quit Smoking Clinic organized by the Ministry of Health.

Definition of Terms:

1. *Quit Smoking* intervention:

Patients admitted to Ministry of Health Hospitals that have Quit Smoking Clinic Service and have enrolled in the Quit Smoking Program.

2. Post Intervention*:*

Patients enrolled in the Quit Smoking Program and have ceased smoking.

Inclusion Criteria **:** Patients enrolled in the Quit Smoking Program in Ministry of Health Hospitals that have Quit Smoking Clinic Service.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of persons who quit smoking within 6 months of enrolling in the Quit Smoking Clinic X 100%

Denominator **:** Total number of persons who smoke who attended the Quit Smoking Clinic

Target **:** 20%
Data Collection **:** 6 monthly
Comments/Review **:**

SERVICE STANDARD 17G: HEALTH EDUCATION SERVICES

Indicator 03 : Percentage of patient referrals seen within two (2) weeks

Rationale : This indicator was selected because:

- Patient Centered services must give priority to prompt attention to patient needs by reducing waiting times for consultation.
- This indicator reflects the effectiveness of the service.

***Definition of Terms*:**

***Patient Referrals*:**

Time taken from the date of referral received to the date seen by the Health Education Officer within two (2) weeks.

Inclusion Criteria **:** All patients referred to the Health Education Officer for consultation/health education

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of patients seen by the Health Education Officer within 2 weeks of referral X 100%

Denominator **:** Total number of patients referred to the Health Officer

Target **:** 80 %
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17G: HEALTH EDUCATION SERVICES

Indicator 04 : Percentage of in-house health education materials (printed & electronic) production which have been pre-tested accordingly

Rationale : This indicator was selected because:

- The production of printed materials is useful tools in health education intervention activities. Behavior change is more likely to occur for those who received tailored materials and those who had higher self-efficacy.
- Printed materials are widely used by healthcare providers as a tool for providing health information.

***Definition of Terms*:**

***Health Education Materials*:**

Printed health education materials (HEMs) are widely used to increase awareness and knowledge, change attitudes and beliefs, and help individuals adopt and maintain healthy lifestyle behaviors. .

Inclusion Criteria **:** All in-house health education materials (printed & electronic) produced every 6 months

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of in-house health education materials (printed & electronic) produced which have been pre-tested X 100 %

Denominator **:** Total number of in-house health education materials(printed & electronic) produced

Target **:** 100 %
Data Collection **:** 6 Monthly
Comments/Review **:**

SERVICE STANDARD 17H: MEDICAL SOCIAL SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of patients registered who have received assistance	100%	Monthly
2.	Percentage of in- patients seen within 48 hours of referral	90%	Monthly
3.	Percentage of Out-patients seen within the same day of referral (subject to Medical Social Officers are available)	90%	Monthly

SERVICE STANDARD 17H: MEDICAL SOCIAL SERVICES

Indicator 01 : Percentage of patients registered who have received assistance

Rationale : This indicator was selected because:

- Patient Centered services must give priority to prompt attention to patient needs for Medical Social Services assistance.
- This indicator reflects the effectiveness of the service.

Definition of Terms:

1. ***Registered with Medical Social Services***

Registration at the Hospital's Medical Social Services Clinic for assistance.

2. ***Types of Medical Social Assistance:***
   - Monetary
   - Transport
   - Prosthetics
   - Counselling
   - Temporary Lodging
   - etc

Inclusion Criteria **:** All patients registered at the Medical Social Services for assistance (all types of assistance)

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of patients registered with Medical Social Services Clinic and received assistance

X 100%

Denominator **:** Total number of patients registered with Medical Social Services for assistance

Target **:** 100%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17H: MEDICAL SOCIAL SERVICES

Indicator 02 : Percentage of inpatients seen within 48 hours of referral

Rationale : This indicator was selected because:

- Patient Centered services must give priority to prompt attention to patient needs by reducing waiting times for consultation/assistance.
- This indicator reflects the effectiveness of the service.

Definition of Terms:

In- Patient Referral

A patient who is admitted to a hospital bed and who receives lodging and food as well as treatment; including referral to the Medical Social Officer for assistance/counseling.

Inclusion Criteria **:** All in-patients referred to the Medical Social Officer for assistance/counseling

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of in-patients seen by the Social Medical Officer within 48 hours of referral X 100%

Denominator **:** Total number of in-patients referred to the Social Medical Officer

Target **:** 90 %
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17H: MEDICAL SOCIAL SERVICES

Indicator 03 : Percentage of Out-patients seen within the same day of referral (subject to Medical Social Officers' availability)

Rationale : This indicator was selected because:

- This indicator measures the respond time taken for the outpatient to be seen by the Medical Social Officer for intervention. Patient Centered services must give priority to prompt attention to patient needs by reducing waiting times for consultation/assistance.
- This indicator reflects the effectiveness of the service and poses a challenge to the Social Medical Officer to deliver the services within the acceptable time frame.

Definition of Terms:

1. Outpatient:

A patient who is not hospitalized but who received treatment at the hospital/clinic/associated facility for diagnosis or treatment. This includes all out-patients referred to the Medical Social Officer for assistance/counseling.

2. Same day of referral:

Refers to the consultation carried out or taking place on the same day as a preliminary action e.g. the patient is seen on the same day of referral from the doctor to the Medical Social Officer.

Inclusion Criteria **:** All out-patients referred to the Medical Social Officer for assistance/counseling (subject to the availability of the medical officer on the same day of referral)

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of out-patients seen by the Social Medical Officer within the same day of referral X 100%

Denominator **:** Total number of out-patients referred to the Social Medical Officer

Target **:** 90 %
Data Collection **:** Monthly
Comments/Remarks:

STANDARD 17I: PSYCHOLOGY COUNSELLING SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of patients registered for counselling and discharged from the programme		Monthly
2.	Percentage of patients requiring referral for further management		Monthly

SERVICE STANDARD 17I: PSYCHOLOGY COUNSELLING SERVICES

Indicator 01 : Percentage of patients registered for counselling and discharged from the programme

Rationale : This indicator was selected because:

- This indicator reflects access to Psychology Counseling Services and being effectively discharged from the programme, which poses a challenge to the Psychology Counsellor to deliver the services effectively.

Definition of Terms:

1. Psychology Counselling:

Counseling psychology is defined as the study of the mental health of individuals engaged in developmental processes. Counseling psychologists are employed in a variety of settings depending on the services they provide and the client populations they serve. Some are employed in colleges and universities as teachers, supervisors, researchers, and service providers. Others are employed in independent practice providing counseling, psychotherapy, assessment, and consultation services to individuals, couples/families, groups, and organizations.

2. Psychology Counselling Services

Psychology Counselling form an integral part of rehabilitation services. The scope of counselling practice shall be provided by qualified and licensed counsellor registered with Counselling Board Malaysia (Act 580).

3. Discharged from the Psychology Counselling programme:

Cessation of participation from the programme having successfully completed the counseling/rehabilitation sessions.

Inclusion Criteria	**:**	All patients referred to the Psychology Counselling Officer for consultation and counseling
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Outcome Indicator**

Numerator	**:**	Number of patients registered for Psychology Counselling sessions and discharged from the programme X 100%
Denominator	**:**	Total number of patients registered for Psychology Counselling Services

Target	**:**	
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 17I: PSYCHOLOGY COUNSELLING SERVICES

Indicator 02 : Percentage of patients requiring referral for further management

Rationale : This indicator was selected because:

- This indicator reflects access to care for further management and effectiveness of the service which poses a challenge to the Psychology Counsellor to make prompt and timely referrals.

Definition of Terms:

1. Psychology Counselling Services:

Psychology Counselling Services form an integral part of rehabilitation services. The scope of counselling practice shall be provided by qualified and licensed counsellor registered with the Counselling Board (Act 580).

2. Patients requiring further management*:*

Refers to patients who having gone through the counseling sessions and needing further management by specialists i.e. psychiatrist.

Inclusion Criteria **:** All patients referred to the Psychology Counsellor for consultation and counseling

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator	**:**	Number of patients attending psychology counselling sessions and requiring referral for further management	X 100%
Denominator	**:**	Total number of patients attending psychology counseling	

Target :
Data Collection : Monthly
Comments/Review :

SERVICE STANDARD 17J: CLINICAL PSYCHOLOGY SERVICES			
There is safety tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of Relapse Cases	Sentinel event	Monthly
2.	Percentage of Psychological Assessment Completed within 30 working days	85%	Monthly

SERVICE STANDARD 17J: CLINICAL PSYCHOLOGY SERVICES

Indicator 01 : Percentage of Relapse Cases

Rationale : This indicator was selected because:

- The Clinical Psychology Services shall be provided only by trained and qualified Clinical Psychologists to outpatients, inpatients in an efficient and effective and caring manner and shall be coordinated with other relevant clinical services in accordance with accepted standards of practice.
- This indicator reflects clinical effectiveness and poses a challenge to the Clinical Psychologist in striving to deliver the services effectively.

Definition of Terms:

1. Clinical Psychology Services*:*

Clinical Psychology Services offer psychotherapy to reduce psychological distress (mental illness), augment and promote psychological well-being and quality of life. The services are part of a multidisciplinary team for psychological readjustment and restoration to psychological fitness.

2. Relapse of Case*:*

Clinical Psychology Services require extended case monitoring of the status of clients, providing support, and accelerating re-entry into treatment in the event of impending or actual relapse. This is accomplished through the efforts with contacts with the client and significant other members of the family and health care providers.

Inclusion Criteria **:** All patients successfully discharged from the Clinical Psychology Services having achieved restoration of psychological fitness.

Exclusion Criteria **:** NA

Type of Indicator **: Sentinel Event**

Numerator	**:**	Number of patients having acquired psychological fitness and successfully discharged from the Clinical Psychology Services and relapsed	X 100%
Denominator	**:**	Total number of patients having acquired psychological fitness and successfully discharged from the Clinical Psychology Services	

Target **: 0**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 17J: CLINICAL PSYCHOLOGY SERVICES

Indicator 02 : Percentage of Psychological Assessment Completed within 30 working days

Rationale : This indicator was selected because:

- Psychological Assessment is the basis for clinical psychology service delivery.
- The use of psychological assessment requires a documented plan for subsequent audit of clinical effectiveness of service delivery.

Definition of Terms:

1. Psychological Assessment:

Psychological assessment is a process of testing that uses a combination of techniques to help arrive at some hypotheses about a person and their behavior, personality and capabilities. Psychological assessment is the extensive purview of psychologists who use assessment tools to better understand what may be causing behavioral, emotional, or cognitive symptoms. Simply by observing a person's behavior during various structured and unstructured tasks, having them and those who know them answer questions on psychological tests, and/or meeting with the person directly, a psychologist can help identify underlying causes and develop a plan for assisting them.

2. Psychological Assessment Completed within 30 working days:

Time taken from the date of referral to the Clinical Psychologist for consultation and treatment to the date of completion of the psychological assessment of the same patient. The waiting time refers to time between the dates the patient is seen by the Clinical Psychologist to the date of completion of the psychological assessment within 30 working days.

Inclusion Criteria **:** All patients referred to the Clinical Psychologist for consultation and treatment.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of patients who had Psychological Assessment completed within 30 working days

Denominator **:** Total number of patients referred to the Clinical Psychologist for consultation

X 100%

Target **:** 85%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 18: PHARMACY SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of Prescription Error		Monthly
2.	Percentage of Dispensing Error		Monthly
3.	Average time for a prescription to be dispensed from time received at counter to time medication given to patient		Monthly
4.	Number and value of expired drugs at end of month over a specified period		Monthly

SERVICE STANDARD 18: PHARMACY SERVICES

Indicator 01 : Percentage of Prescription Error

Rationale : This indicator was selected because:

- Medication Error is a significant problem in hospitals and has an impact on the safety of patients. The large amount of medications used as well as the availability of new and potent medicines requires further enhancement on the awareness on medication safety. It is a serious adverse event where there is much pain and suffering or temporary/permanent disability.
- It is an indicator of the delivery of safe patient care in the hospital.

Definition of Terms:

1. Medication Error:

A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient or consumer. Such an event may be related to professional practices, healthcare products, procedures and systems including prescribing, order communication, product labelling, packaging and nomenclature, compounding, dispensing, distribution, administration, education, monitoring and use. Medication errors may be committed by both inexperienced and experienced personnel like doctors, pharmacists, dentists and other healthcare provider, patients, manufacturers, caregivers and others.

2. Prescribing Error:

Incorrect drug product selection (based on indications, contraindications, known allergies, existing drug therapy, and other factors), dose, dosage form, quantity, route of administration, concentration, rate of administration, or instructions for use of a drug product ordered or authorized by physician (or other legitimate prescriber); illegible prescriptions or medication orders that lead to errors.
(Reference: Guideline on Medication Error Reporting Ministry of Health Malaysia)

Inclusion Criteria **:** All prescriptions made out for patients (in-Patient and Out- Patients)
Exclusion Criteria **:** NA
Type of Indicator **: Rate Based Outcome Indicator**

Numerator	**:**	Number of prescription errors (out-patients and in-patients)	X 100%
Denominator	**:**	Total number of prescriptions (outpatients and Inpatients) written by doctors	

Target	**:**	
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 18: PHARMACY SERVICES

Indicator 02 : Percentage of Dispensing Error

Rationale :

This indicator was selected because:

- Medication Error is a significant problem in hospitals and has an impact on the safety of patients. The large amount of medications used as well as the availability of new and potent medicines requires further enhancement on the awareness on medication safety. It is a serious adverse event where there is much pain and suffering or temporary/permanent disability.
- It is an indicator of the delivery of safe patient care in the hospital.

Definition of Terms:

1. Medication Error:

A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient or consumer. Such an event may be related to professional practices, healthcare products, procedures and systems including prescribing, order communication, product labelling, packaging and nomenclature, compounding, dispensing, distribution, administration, education, monitoring and use. Medication errors may be committed by both inexperienced and experienced personnel like doctors, pharmacists, dentists and other healthcare provider, patients, manufacturers, caregivers and others.

2. Dispensing Error:

- Dispensing or administration to the patient of medication not authorised by a legitimate prescriber.
- Dispensing or administration to the patient of a dose that is greater than or less than the amount ordered by the prescriber or administration of multiple doses to the patient, i.e. one or more dosage units in addition to those that were ordered.
- Dispensing or administration to the patient of a drug product in a different dosage form than that ordered by the prescriber.
- Dispensing or administration of a drug that has expired or for which the physical or chemical dosage-form integrity has been compromised.
  (Reference: Guideline on Medication Error Reporting Ministry of Health Malaysia)

Inclusion Criteria	**:**	All prescriptions made for patients (in-Patient and Out- Patients*)*
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Outcome Indicator**

Numerator	**:**	Number of dispensing errors (out-patients and in-patients)	
Denominator	**:**	Total number of prescriptions dispensed (outpatients and Inpatients)	X 100%

Target	**:**	
Data Collection	**:**	Monthly
Comments/Review	**:**	

SERVICE STANDARD 18: PHARMACY SERVICES

Indicator 03 : Average time for a prescription to be dispensed from time received at counter to time medication given to patient

Rationale : This indicator was selected because:

- Promptness of service is one criteria of quality care. Patient centred service must give priority to reducing waiting time for dispensing. This indicator reflects access and patient centeredness.
- Long waiting time can adversely affect patient satisfaction

Definition of Term:

1. Waiting Time:

Time when a prescription is received at the pharmacy counter to the time the medication (s) is dispensed to the patient.

2. Dispense:

Process of delivering medication to the patient

Inclusion Criteria **:** All prescriptions received from the Out Patient Pharmacy Department /Specialist Clinic/Follow up Clinic

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Total cumulative time taken to dispense all prescriptions received for the day from the time of receiving the first prescription to the time of the last dispensing

Denominator **:** Total number of prescriptions (outpatients) received for the day

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 18: PHARMACY SERVICES

Indicator 04 : Number and value of expired drugs at end of month over a specified period

Rationale : This indicator was selected:

- To ensure good quality and safe medicines are available and accessible in a system that uses resources effectively for enhancement of the pharmaceutical services with better use of medicines and reduced wastage.
- To reflect the efficiency of the pharmaceutical services.

Definition of Term:

Value of Expired Drugs*:*

The cost of the drugs at the time of purchase.

Inclusion Criteria **:** All expired drugs in stock at the end of the month over a specified period.

Exclusion Criteria **:** NA

Type of Indicator **: Number and Value (cost)**

Numerator **:** Total number and value (cost) of expired drugs (all types of medications- oral, parental etc.) at the end of each month over a specified period.

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 19: CENTRAL STERILE SUPLLY SERVICES (CSSS)			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of sterile instrument sets rejected	< 5%	Monthly
2.	Percentage of incidents reported monthly that have had Root Cause Analysis (RCA) done and action taken to prevent recurrence		Monthly

SERVICE STANDARD 19: CENTRAL STERILE SUPPLY SERVICES (CSSS)

Indicator 01 : Percentage of sterile instrument sets rejected

Rationale : This indicator was selected because:

- The Central Sterile Supply Services responsibility is to provide centralized sterilizing services and sterile supplies for all areas within the Facility that use sterile instruments, dressings, linen and other items to effectively prevent and control the incidence of Healthcare Acquired Infection (HAI).
- This indicator reflects the efficiency of the Central Sterile Supply Services.

Definition of Term:

Reject of sterile instruments:

The major role of the CSSS is disinfection, sterilization and reprocessing service and thermal decontamination for products not able to be sterilized. Occasions of reject sterile instruments sets could cause disruptions in surgical procedures and cost for the facility due to:

- Breech in the integrity of sterility
- Incomplete sets
- Use of poor packaging material
- etc.

Inclusion Criteria **:** Reject instrument sets per batch from all areas (OT, wards, clinics) of the facility at the end of the day over a specified period.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Output Indicator**

Numerator **:** Total number of reject sterile instrument sets in a month X 100%

Denominator **:** Total number of instrument sets sterilized in a month

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 19: CENTRAL STERILE SUPPLY SERVICES (CSSS)

Indicator 02 : Percentage of incidents reported monthly that have had Root Cause Analysis (RCA) done and action taken to prevent recurrence.

Rationale : This indicator was selected because:

- The Central Sterile Supply Services responsibility is to provide centralized sterilizing services and sterile supplies for all areas within the Facility that use sterile instruments, dressings, linen and other items to effectively prevent and control the incidence of Healthcare Acquired Infection (HAI).

- Knowledge of how to prevent harm to patients and staff during care is the most important knowledge in the field of patient safety. One of the best practices for patient safety is to establish a "No Blame, Reporting Culture by initiating an Incident Reporting and Learning System.

Definition of Terms:

1. Incidents:

Mishaps, near misses and hazards that have a likely hood of recurring if risk management strategies are not institutionalised. Example: incomplete sets, breach of sterility, staff injury, mechanical failure/malfunction of autoclaves etc.

2. Root Cause Analysis (RCA)

Root Cause Analysis is a structured investigation that aims to identify the true cause of a problem and the actions necessary to eliminate it. (Bjorn Andersen and Tom Fagerhaug. Root Cause Analysis: Simplified Tools and Techniques. McGraw- Hill, 2000)

Inclusion Criteria **:** All types of incidents needing RCA reported and documented

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Number of incidents reported and where Root Cause Analysis is done and actions taken in the month

X 100%

Denominator **:** Total number of incidents reported in the month

Target **:**
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 20: HOUSEKEEPING SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Trend of performance score during in-house inspection/joint inspection	80% with minimum score of 3	Monthly
2.	Customer satisfaction feedback survey	80% satisfaction	6 Monthly

SERVICE STANDARD 20: HOUSEKEEPING SERVICES

Indicator 01 : Trend of performance score during in-house inspection/joint inspection

Rationale : This indicator was selected because:

- The Housekeeping Services are an integral part of the hospital support services to ensure a clean environment in the hospital and is crucial in the prevention and control of Healthcare Acquired Infection (HAI).

- This indicator measures the quality of the performance of Housekeeping Services. Regular trending of the performance of the service examines the weakness and shortfalls in the overall improvement of the Housekeeping Services.

Definition of Terms:

1. ***Trending of Performance Score****:*

During the periodic in-house/joint inspection of the performance of the house keeping services, staff of the hospital/outsourced services contractor conducts an objective assessment using set criteria and scoring on the performance of the cleansing service for each area of the facility. These scores are to be trended as per achievement for each area of the facility for a specific period.

2. ***Performance Score:***
   1 = Poor
   2 = Fair
   3 = Good
   4 = Excellent
   5 = Non -Applicable

(Source: Technical Requirements Performance Indicators, Ministry of Health Hospital Support Services)

Inclusion Criteria **:** All the areas in the facility to be included i.e. wards, critical care areas, operating theatre, Emergency Department etc.

Exclusion Criteria **:** NA

Type of Indicator **: Process Based Indicator**

Numerator **:** Performance trend showing 80% with minimum score of 3 for cleansing servicein all areas of the Facility

Target **:** 80% with minimum score of 3
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 20: HOUSEKEEPING SERVICES

Indicator 02 : Customer satisfaction feedback survey

Rationale *:* This indicator was selected:

- The Housekeeping Services are an integral part of the hospital support services to ensure a clean environment in the hospital and is crucial in the prevention and control of Healthcare Acquired Infection (HAI) and mishaps may occur in the cleansing service
- As proxy to measurement of patient- centred services and level of client satisfaction to meeting patient needs on cleanliness of the environment and comfort of the patient.

Definition of Terms : Patient Satisfaction Survey

Patient satisfaction survey is a measure of the extent to which a patient (inpatient and outpatient) is content with the cleanliness of the environment/facilities of the Healthcare Facility and the level of patient comfort.

Inclusion Criteria **:** All out-patients and in- patients

Exclusion Criteria **:** NA

Type of Indicator : Patient Satisfaction Survey

Numerator : Number of patient satisfaction surveys done every six(6) months with 80% satisfaction level

Target **:** 80% satisfaction level
Data Collection **:** 6 Monthly
Comments/Review **: –**

SERVICE STANDARD 21: LINEN SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of Linen Shortfall	2 %	Monthly
2.	Linen Rejection Rate	< 2 %	Monthly
3.	Percentage of incidents reported monthly that have had Root Cause Analysis (RCA) done and action taken to prevent recurrence	100 %	Monthly
4.	Internal customer satisfaction survey	80% satisfaction	6 monthly

SERVICE STANDARD 21: LINEN SERVICES

Indicator 01 : Percentage of Linen Shortfall

Rationale : This indicator was selected because:

- A reliable laundry service is of utmost importance to healthcare facilities. In healthcare facilities, patients expect linen to be changed daily. An adequate supply of clean linen that is sufficient for the comfort and safety of the patient thus becomes essential.
- The Linen Service is an integral part of the hospital support services to ensure clean Linen and Laundry Services in hospitals and is crucial in the prevention and control of Healthcare Acquired Infection (HAI).
- Laundry and linen service plays a very important role in maintaining and safeguarding the health and hygiene of both the inpatient and medical staff.

Definition of Terms:

1. Hospital Linen

The term 'hospital linen' includes all textiles used in the hospital including mattress, pillow covers, blankets, bed sheets, towels, screens, curtains, doctors/staff coats, theatre cloth etc. The hospital uses these materials in different areas like Operation Theatre, wards, outpatient departments and office areas.

2. Linen Services

Linen Services include the supply and delivery of clean linen and the collection and washing of dirty and soiled linen which may be provided from within the Facility or outsourced where linen shortfalls are likely to occur.

3. Shortfall in Linen Services:

Target per bed weight (e.g. 5.34 kg) versus Actual Received (4.85 kg/Bed) or par level as is the current practice in hospitals.

Inclusion Criteria **:** All types of linen used in the Healthcare Facility i.e. patient's linen, bed covers, linen for drapes and procedures etc.

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Outcome Indicator**

Numerator **:** Total quantity of Linen by types (bed sheet, patients pyjamas, bedcovers etc) and par levels actually supplied to the Facility in a month

X 100%

Denominator : Total quantity of Linen by types (bed sheet, patients pyjamas, bedcovers, etc.) and par levels agreed to be supplied to the Facility in a month

Target **:** 2%

Data Collection **:** Monthly

Comments/Review **:**

SERVICE STANDARD 21: LINEN SERVICES

Indicator 02 : Linen Rejection Rate

Rationale : This indicator was selected because:

- A reliable laundry service is of utmost importance to healthcare facilities. In healthcare facilities, patients expect linen to be changed daily. An adequate supply of clean linen that is sufficient for the comfort and safety of the patient thus becomes essential.
- The Linen Service is an integral part of the hospital support services to ensure clean Linen and Laundry Services in hospitals and is crucial in the prevention and control of Healthcare Acquired Infection (HAI).
- Laundry and linen service plays a very important role in maintaining and safeguarding the health and hygiene of both the patients and medical staff.

Definition of Terms:

1. Hospital Linen:

The term 'hospital linen' includes all textiles used in the hospital including mattress, pillow covers, blankets, bed sheets, towels, screens, curtains, doctors/staff coats, theatre cloth etc. The hospital uses these materials in different areas like Operation Theatre, wards, outpatient departments and office areas.

2. Linen Rejection:

Washed linen upon delivery maybe rejected by the facility for various reasons i.e. odour, torn, stained, torn etc.

Inclusion Criteria **:** All types of washed hospital linen upon delivery that does not comply with the set standards of clean linen

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Output Indicator**

Numerator **:** Total quantity of Linen by weight and types (bed sheet, patients pyjamas, bed covers etc.) rejected by the Facility in a month

Denominator **:** Total quantity of Linen by weight and types (bed sheet, patients pyjamas, bedcovers etc.) supplied to the Facility in a month

X 100%

Target **:** < 2%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 21: LINEN SERVICES

Indicator 03 : Percentage of incidents reported monthly that have had Root Cause Analysis (RCA) done and action taken to prevent recurrence.

Rationale : This indicator was selected because:

- Knowledge of how to prevent harm to patients and staff during care is the most important knowledge in the field of patient safety. One of the best practices for patient safety is to establish a "No Blame, Reporting Culture by initiating an Incident Reporting and Learning System.

- The Linen Service is an integral part of the hospital support services to ensure clean linen and laundry services in hospitals and is crucial in the prevention and control of Healthcare Acquired Infection (HAI).

Definition of Terms:

1. Linen Services:

Linen Services include the supply and delivery of clean linen and the collection and washing of dirty and soiled linen which may be provided from within the Facility or outsourced where incidents of mishaps i.e. injury, linen shortfalls etc are likely to occur.

2. Incidents:

Mishaps, near misses and hazards i.e. injury due to unclear Standard Operating Procedures that have a likely hood of recurring if risk management strategies are not institutionalised.

3. Root Cause Analysis (RCA):

Root Cause Analysis is a structured investigation that aims to identify the true cause of a problem and the actions necessary to eliminate it? (Bjorn Andersen and Tom Fagerhaug. Root Cause Analysis: Simplified Tools and Techniques. McGraw- Hill, 2000)

Inclusion Criteria : All types of incidents needing RCA reported and documented within a specified period

Exclusion Criteria : NA

Type of Indicator : **Rate Based Process Indicator**

Numerator : Total number of incidents reported for which Root Causes Analysis is done and actions taken in a month. X 100%

Denominator : Total number of incidents reported in a month

Target : 100%

Data Collection : Monthly

Comments/Review :

SERVICE STANDARD 21: LINEN SERVICES

Indicator 04 : Internal Customer satisfaction survey

Rationale *:* This indicator was selected:

- The Linen Service is an integral part of the hospital support services to ensure clean linen and laundry services in hospitals and is crucial in the prevention and control of Healthcare Acquired Infection (HAI).
- Customer satisfaction survey is one of the tools that can be used in recognizing areas for improvement in the linen services provided.

Definition of Terms :

1. Facility's Internal Customer:

Internal Customer refers to the Facility's staff involved in the handling of Linen and Laundry Services including representatives of the Facility's Management i.e. liaison staff, ward staff etc.

2. Satisfaction Survey:

Internal customer satisfaction survey is a measure of the extent to which the Facility's management/ staff is satisfied with the Linen and Laundry Services in particular the cleanliness and adequacy of patients' garments, linen used for beddings, towels etc. The survey is referring to a Customer Satisfaction Survey Questionnaire.

Inclusion Criteria	**:**	All staff/clients handling the Facility's Linen and Laundry Services and participates in the Internal Customer Satisfaction Survey
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	:	Number of participating Internal Customers indicating they were "satisfied" in the customer satisfaction survey	X 100 %
Denominator	:	Total number of Internal Customers who participated in the Customer Satisfaction Survey	

Target	**:**	80% satisfaction level
Data Collection	**:**	6 Monthly
Comments/Review	**:**	**–**

SERVICE STANDARD 22: FOOD SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of ready to serve food tested negative for pathogenic microorganism as per schedule	100%	3 Monthly
2.	Occurrence of physical contamination of food served to patients	≤ 1% cases	Monthly
3.	Client Food Satisfaction survey	> 80% satisfaction	6 Monthly

SERVICE STANDARD 22: FOOD SERVICES

Indicator 01 : Percentage of ready to serve food tested negative for pathogenic microorganism as per schedule

Rationale : This indicator was selected because:

- This indicator reflects the safety of the Healthcare Facility's Food Services for in-patients' consumption.
- There should be no occurrences of samples of ready to serve food being tested positive for pathogenic micro-organism if high quality food preparation, handling and transport are implemented or adhered to.

Definition of Terms:

1. Ready to serve food:

Ready to eat/serve food means food (cooked and freshly cut) that is in a form that is edible without additional preparation to achieve food safety. Foods which are ready to be taken for sampling under strict sanitary and food quality standards and tested for pathogenic micro-organism.

2. Food testing for microorganism:

Microbiology testing is a crucial requirement across many food industries worldwide where products, processes and human health are at risk of being negatively affected by the presence and breeding of micro-organisms such as specific pathogens, bacteria, yeast and moulds. Food testing for microorganism is important to determine the safety and quality of food.

3. As per schedule:

Samples (6-10) of ready to be served food (cooked and freshly cut) for in-Patients taken for testing for microorganism over every three (3) months

Inclusion Criteria	**:**	Samples (6-10) of ready to be served food (cooked and freshly cut) for In-Patient Food Services (that include outsourced or in-house kitchen) are taken for sampling every three (3) months
Exclusion Criteria	**:**	NA
Type of Indicator	**:**	**Rate Based Process Indicator**

Numerator	**:**	Number of samples of ready to serve food (cooked and freshly cut) for in-patients tested negative for pathogenic micro-organism
Denominator	**:**	Total number of samples (6-10) of ready to serve food (cooked and freshly cut) for in-patients tested for pathogenic micro-organism

Target	**:**	100%
Data Collection	**:**	3 monthly
Comments/Review	**:**	

SERVICE STANDARD 22: FOOD SERVICES

Indicator 02 : Occurrence of physical contamination of food served to patients

Rationale : This indicator was selected because:

- This indicator reflects the safety of the Food and Dietary Services for patient's consumption.
- There should be no occurrences of food contamination if high quality food preparation, handling and transport are implemented or adhered to.

Definition of Terms:

Contaminated Food:

Presence of materials that are not normally found in food served/prepared for inpatients(that include outsourced and in-house kitchen)

Inclusion Criteria **:** Food prepared for all inpatients/ on call staff

Exclusion Criteria **:** Micro-organisms and toxic chemicals.

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of Occurrences of Physical Contamination of Food during the study period

Denominator **:** Total number of food plating prepared during the study period

Target **:** ≤ 1% cases
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 22: FOOD SERVICES

Indicator 03 : Client Food Satisfaction survey

Rationale *:* This indicator was selected because:

- It is the hospital's responsibility to provide high quality food services for the patients to support in the treatment and recovery of the patient's health during admission at the hospital. Hence standards of food quality should be implemented and adhered to.
- This survey is a proxy measurement of Patient- Centred Services and Client Satisfaction level on the Food Services.
- Client satisfaction survey is one of the tools that can be used in recognizing areas for improvement in the Food Services.

Definition of Terms :

1. ***Hospital Client:***

Refers to all in- patients provided Food Services during their course of admission in the Hospital

2. ***Food Satisfaction Survey***

Client food satisfaction survey is a measure of the extent to which an in-patient is content with the Food Services in particular in meeting the patient's nutritional requirements and dietary needs. The survey is referring to a Customer Satisfaction Survey Questionnaire.

Inclusion Criteria **:** All in- patients in all wards/ units of the Facility

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator	**:**	Numbers of Client Food Satisfaction Survey Feedback with 80% satisfaction level	X 100 %
Denominator	**:**	Total number of clients that participated in the Client Food Satisfaction Survey	

Target	**:**	**>** 80% satisfaction level
Data Collection	**:**	6 Monthly
Comments/Review	**:**	**–**

SERVICE STANDARD 23: FORENSIC SERVICES			
There are including tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of bodies released to next of kin/claimant (non- medico-legal cases) within three (3) hours from time bodies are received in the mortuary	75%	Monthly
2.	Percentage of correct bodies released to the right next of kin/claimant	100%	Monthly
3.	Percentage of post-mortem for non-complicated cases performed within 24 hours from the time the Polis 61 Order is received	80%	Monthly
4.	Percentage of completion of post-mortem report for non-complicated cases from the date of post-mortem within eight (8) weeks	80%	Monthly

Note:
Non-complicated cases refer to accidents, suicides and natural deaths which are routine police cases subjected to forensic post-mortem examination.

SERVICE STANDARD 23: FORENSIC SERVICES

Indicator 01 : Percentage of bodies released to next of kin/claimant (non- medico-legal cases) within three (3) hours from the time bodies are received in the mortuary

Rationale : This indicator was selected because:

- This indicator reflects the timeliness for the release of bodies for non- medico-legal cases and client centeredness of care in the Mortuary Service. There is a need to hasten the release of bodies of non - medico- legal cases for cultural and religious reasons.

Definition of Terms:

Non- Medico-legal cases:

There is no issue of Polis 61 order for post mortem.

Inclusion Criteria **:** Bodies of all cases requiring no post mortem

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of bodies released (non-medico-legal cases) to next of kin/claimant within 3 hours from the time bodies were received in the mortuary X 100%

Denominator **:** Total number of bodies received (non-medico-legal cases) in the mortuary during the month

Target **:** 75%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 23: FORENSIC SERVICES

Indicator 02 : Percentage of correct bodies released to the right next of kin/claimant

Rationale : This indicator was selected because:

- This indicator reflects the efficiency of the Mortuary Service. The release of wrong bodies to the next of kin/claimant can turn out to be traumatic for the family as well as a medico-legal issue and an embarrassment to the facility.

Definition of Term:

Release of Correct Bodies:

Refers to the release of correct bodies (correct identity of the deceased) or to the correct party

Inclusion Criteria **:** All bodies received at the mortuary

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of correct bodies released to the next of kin/claimant X100%

Denominator **:** Total number of bodies received in the mortuary during the month

Target **:** 100%
Data Collection **:** Monthly
Comment/Review **:**

SERVICE STANDARD 23: FORENSIC SERVICES

Indicator 03 : Percentage of post-mortem for non-complicated cases performed within 24 hours from the time the Polis 61 Order is received

Rationale : This indicator was selected because:

- This indicator reflects the timeliness of post mortems for non-complicated cases and client centeredness of care in the Mortuary Service.
- It also shows the clinical effectiveness of care and efficiency of the Forensic Services

Definition of Terms:

1. Post –mortem Examination:

An autopsy also known as a post-mortem examination is a highly specialized surgical procedure that consists of a thorough examination of a corpse by dissection to determine the cause and manner of death and to evaluate any disease or injury that may be present.

2. Non-Complicated Cases:

Non-complicated cases refer to accidents, suicides and natural deaths which are routine police cases subjected to forensic post-mortem examination.

Inclusion Criteria **:** All non- complicated cases requiring post mortem

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of post-mortems for non-complicated cases performed within 24 hours from the time Polis 61 Order is received

X 100 %

Denominator **:** Total number of post-mortems for non-complicated cases performed with Polis Order 61 received in a month

Target **:** 80%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 23: FORENSIC SERVICES

Indicator 04 : Percentage of completion of post-mortem report for non-complicated cases from the date of post-mortem within eight (8) weeks

Rationale : This indicator was selected because:

- This indicator reflects the efficiency of the Forensic Services and timeliness for post mortem reports for non-complicated cases.

Definition of Terms:

1. Post –mortem Report:

A detailed clinical report of a postmortem examination of a cadaver. An autopsy also known as a post-mortem examination is a highly specialized surgical procedure that consists of a thorough examination of a corpse by dissection to determine the cause and manner of death and to evaluate any disease or injury that may be present.

2. Non-Complicated Cases :

Non-complicated cases refer to accidents, suicides and natural deaths which are routine police cases subjected to forensic post-mortem examination.

Inclusion Criteria **:** All non- complicated cases requiring post mortem

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of post-mortem reports completed within eight (8) weeks from date of post mortem for non- complicated cases X 100%

Denominator : Total number of post-mortems performed for non – complicated cases within the month

Target **:** 80%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 23A: MORTUARY SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Percentage of bodies released to next of kin/claimant (non- medico-legal cases) within three (3) hours from time bodies are received in the mortuary	75%	Monthly
2.	Percentage of correct bodies released to the right next of kin/claimant	100%	Monthly
3.	Percentage of post-mortem for non-complicated cases performed within 24 hours from the time the Polis 61 Order is received (where applicable)	80%	Monthly
4.	Percentage of completion of post-mortem report for non-complicated cases from the date of post-mortem within eight (8) weeks	80%	Monthly

Note:
Non-complicated cases refer to accidents, suicides and natural deaths which are routine police cases subjected to forensic post-mortem examination

SERVICE STANDARD 23A: MORTUARY SERVICES

Indicator 01 : Percentage of bodies released to next of kin/claimant (non- medico-legal cases) within three (3) hours from the time bodies are received in the mortuary

Rationale : This indicator was selected because:

- This indicator reflects the timeliness for the release of bodies for non- medico-legal cases and client centeredness of care in the Mortuary Service. There is a need to hasten the release of bodies of non - medico- legal cases for cultural and religious reasons.

Definition of Terms:

Non- Medico-legal cases:

There is no issue of Polis 61 order for post mortem.

Inclusion Criteria **:** Bodies of all cases requiring no post mortem

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of bodies released (non-medico-legal cases) to next of kin/claimant within 3 hours from the time bodies were received in the mortuary X 100%

Denominator **:** Total number of bodies received (non-medico-legal cases) in the mortuary during the month

Target **:** 75%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 23A: MORTUARY SERVICES

Indicator 02 : Percentage of correct bodies released to the right next of kin/claimant

Rationale : This indicator was selected because:

- This indicator reflects the efficiency of the Mortuary Service. The release of wrong bodies to the next of kin/claimant can turn out to be traumatic for the family as well as a medico-legal issue and an embarrassment to the facility.

Definition of Term:

Release of Correct Bodies:

Refers to the release of correct bodies (correct identity of the deceased) or to the correct party

Inclusion Criteria **:** All bodies received at the mortuary

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator : Number of correct bodies released to the next of kin/claimant **Denominator :** Total number of bodies received in the mortuary during the month	X100%

Target **:** 100%
Data Collection **:** Monthly
Comment/Review **:**

SERVICE STANDARD 23A: MORTUARY SERVICES

Indicator 03 : Percentage of post-mortem for non-complicated cases performed within 24 hours from the time the Polis 61 Order is received

Rationale : This indicator was selected because:

- This indicator reflects the timeliness of post mortems for non-complicated cases and client centeredness of care in the Mortuary Service.
- It also shows the clinical effectiveness of care and efficiency of the Forensic Services

Definition of Terms:

1. Post –mortem Examination:

An autopsy also known as a post-mortem examination is a highly specialized surgical procedure that consists of a thorough examination of a corpse by dissection to determine the cause and manner of death and to evaluate any disease or injury that may be present.

2. Non-Complicated Cases:

Non-complicated cases refer to accidents, suicides and natural deaths which are routine police cases subjected to forensic post-mortem examination.

Inclusion Criteria **:** All non- complicated cases requiring post mortem(where applicable)

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of post-mortems for non-complicated cases performed within 24 hours from the time Polis 61 Order is received X 100 %

Denominator **:** Total number of post-mortems for non-complicated cases performed with Polis Order 61 received in a month

Target **:** 80%
Data Collection **:** Monthly
Comment/Review **:**

SERVICE STANDARD 23A: MORTUARY SERVICES

Indicator 04 : Percentage of completion of post-mortem report for non-complicated cases from the date of post-mortem within eight (8) weeks

Rationale : This indicator was selected because:

- This indicator reflects the efficiency of the Forensic Services and timeliness for post mortem reports for non-complicated cases.

Definition of Terms:

1. Post –mortem Report:

A detailed clinical report of a postmortem examination of a cadaver. An autopsy also known as a post-mortem examination is a highly specialized surgical procedure that consists of a thorough examination of a corpse by dissection to determine the cause and manner of death and to evaluate any disease or injury that may be present.

2. Non-Complicated Cases :

Non-complicated cases refer to accidents, suicides and natural deaths which are routine police cases subjected to forensic post-mortem examination.

Inclusion Criteria **:** All non- complicated cases requiring post mortem

Exclusion Criteria **:** NA

Type of Indicator **: Rate Based Process Indicator**

Numerator **:** Number of post-mortem reports completed within eight (8) weeks from date of post mortem for non- complicated cases X 100%

Denominator : Total number of post-mortems performed for non – complicated cases within the month

Target **:** 80%
Data Collection **:** Monthly
Comments/Review **:**

SERVICE STANDARD 24A: CLINICAL RESEARCH CENTRE SERVICES			
There is tracking and trending of specific performance indicators which include but not limited to at least two (2) of the following indicators:			
No	**INDICATOR**	**TARGET**	**Reporting Frequency**
1.	Number of training conducted per year	Minimum 2 per year	Yearly
2.	Number of publications per year	Minimum 2 per year	Monthly

SERVICE STANDARD 24A: CLINICAL RESEARCH CENTRE

Indicator 01: Number of training conducted per year

Rationale : This indicator was selected as a generic indicator because:

- Staff knowledge, competency and skills acquired to conduct studies related to clinical practices enable the Health Facility to share on best practices in the industry. Training in Clinical Research is an important element in continuing education for staff development in clinical research and practices.
- The Hospital's Clinical Research Centre must undertake the responsibility to conduct Clinical Research Training for its own staff and for the Ministry of Health where required.
- Training in Clinical Research will be an early exposure and encouragement for staff to be involved in research

Definition of Terms :

Training in Clinical Research :

Refers to continuing education/training program designed to educate an individual and give him or her further skills or knowledge on Clinical Research to be applied in his or her line of work. These programs are intended to educate persons on new advancements, or to build upon a person's expertise in a given field.

Inclusion Criteria **:** All training conducted in the Facility in relation to Clinical Research in a year

Exclusion Criteria **:** NA

Type of Indicator **:** **Clinical Effectiveness and Quality Improvement**

Numerator **:** Total number of training courses on Clinical Research conducted in the Facility in a year

Target **:** Minimum 2 per year
Data Collection **:** Yearly
Comments/Review **:**

SERVICE STANDARD 24A: CLINICAL RESEARCH CENTRE SERVICES

Indicator 02: Number of publications per year

Rationale : This indicator was selected because:

- The Hospital's Clinical Research Centre must undertake the responsibility to publish Clinical Research studies conducted by the staff to share on their experiences and best practices in the industry. Publication on Clinical Research is an important element in continuing education for staff development.

- Publications on Clinical Research will be an early exposure and encouragement for staff to be involved in research

Definition of Terms :

Publications on Clinical Research:

Studies with significant results more likely to lead to a greater number of publications and presentations and to be published in journals with a high citation impact factor.

Inclusion Criteria **:** All publications on Clinical Research studies undertaken by the Facility's Clinical Research Centre

Exclusion Criteria **:** NA

Type of Indicator **: Clinical Effectiveness and Quality Improvement**

Numerator : Number of publications on Clinical Research undertaken the Facility's Clinical Research Centre in a year

Target **:** Minimum 2 per year
Data Collection **:** Yearly
Comments/Review **:**

SERVICE STANDARD 25: MEDICAL ASSISTANT SERVICES STANDARDS – 1st EDITION

There is tracking and trending of the following specific performance indicators for the service:

No	INDICATOR	TARGET	Reporting Frequency
1.	Number of fire drill that has been carried out by the hospital in the corresponding year: a. Fire Drill at hospital level: Once a year b. Tabletop Exercise at hospital level: Twice a year (Once in 6 month)	a) Once a year b) once in 6 months	Annually 6 monthly
2.	Dispatch and Ambulance Preparedness of Primary Responses	≥90%	
3.	Percentage of Medical Assistants in Emergency Services trained in Advanced Life Support (ALS)	Non-specialist hospital: ≥30% Specialist hospital: ≥50%)	
4.	Percentage of Medical Assistants with post basic qualification and advance training in relevant disciplines.	≥ 50% (for staff with at least 3 years working experience)	
5.	Peak Flow Rate (PEFR) Implementation for Asthma Patients in Asthma Bay by Medical Assistant (AMO)	>80% number of all asthma patients with Pre and Post PEFR treated in Asthma Bay	

SERVICE STANDARD 25: MEDICAL ASSISTANT SERVICES STANDARDS – 1st EDITION

There is tracking and trending of the following specific performance indicator for the service:

Indicator 01	**Number of Fire Drills that have been carried out by the hospital in the corresponding year:** **a. Fire Drill at hospital level: Once a year** **b. Tabletop Exercise at hospital level: Twice a year (Once in 6 months)**
Element	**Environmental (Technical) Support**
Rationale	Fire drills are essential in any workplace or public building for practicing what to do in the event of a fire (Terry Penney, 2016). Not only do they ensure that all staff, customers and visitors in the premise understand what they need to do in case of fire, but they also help to test how effective the fire evacuation plan is and to improve certain aspects of the fire provisions.
Definition of Terms	Fire Drill: A practice of the emergency procedures to be used in case of fire. Fire Drill with multiple Agencies: Fire Drill that involves Fire & Rescue Department or/and other agencies (e.g. St John Ambulance/ Red Crescent) with the hospital staff/ personnel. Tabletop exercise: A meeting to discuss a simulated emergency situation. Members of the team/ hospital review and discuss the actions they would take in a particular emergency, testing their emergency plan in an informal, low stress environment. Tabletop exercises are used to clarify roles and responsibilities and to identify additional campus mitigation and preparedness needs. The exercise should result in action plans for continued improvement of the emergency plans.
Criteria	**Inclusion**: All hospital building. **Exclusion criteria**: Nil
Type of indicator	Rate-based process indicator
Numerator	a. Number of Fire Drill that has been carried out in the corresponding year. b. Number of Tabletop Exercise that has been carried out in the corresponding year.
Denominator	a. Total number of Fire Drill that has been planned in the corresponding year b. Total number of Tabletop Exercise that has been planned in the corresponding year.

Formula	Numerator x 100% Denominator
Standard	**100%**
Data Collection	1. **Where:** Data will be collected in the Administrative unit/ Safety department/ Engineering Department/ OSH Unit (depending on the hospital). 2. **Who:** Data will be collected by the Officer/ staff in-charge of the unit/ department. 3. **How frequent:** 6 monthly data collection. 4. **Who should verify:** All performance data must be verified by the Head of Administrative Unit/ Department/ Deputy Hospital Director (Administrative) / Hospital Director. 5. **How to collect:** Data will be collected from the record book/ Action Report/ verified meeting minutes with the unit/ department
Remarks	-

SERVICE STANDARD 25: MEDICAL ASSISTANT SERVICES STANDARDS – 1st EDITION

There is tracking and trending of the following specific performance indicator for the service:

Indicator 02	**Dispatch and Ambulance Preparedness for Primary Responses within 5 minutes. (Target: ≥90%)**
Element	**Emergency Medical and Trauma Services**
Rationale	1. Delay in ambulance turnout time may contribute to increased morbidity and mortality. 2. The aim is to reduce the ambulance turnout time and ensuring an appropriate ambulance response in order to improve pre-hospital care.
Definition of Terms	**Ambulance preparedness:** Appropriate ambulance that is capable of providing basic emergency medical and trauma care. **Ambulance dispatch:** The mobilization of ambulance to the designated destination after the activation call is terminated. **Primary response**: Initial response and care by emergency medical services (by an ambulance services). **Within (≤) 5 minutes:** Time taken from the ambulance call was terminated/ completed to the dispatch of the ambulance from the hospital to the scene.
Criteria	Inclusion: NA Exclusion: 1. Request for inter-hospital transfer. 2. Patient transportation. 3. Secondary response. 4. Mass casualty incident. 5. Non-emergency cases. 6. Diverted calls to other agencies.
Type of indicator	Rate-based process indicator
Numerator	Number of ambulance preparedness and dispatch for primary response within (≤) 5 minutes
Denominator	Total number of ambulance calls
Formula	$\frac{\text{Numerator}}{\text{Denominator}} \times 100\%$

Standard	≥ 90%
Data Collection	1. **Where:** Data will be collected in Emergency Department/ area that cater the above condition. 2. **Who:** Data will be collected by Officer/ Paramedic/ Nurse in-charge (indicator co-ordinator) of the department/ unit. 3. **How frequent:** Monthly data collection. 4. **Who should verify**: All performance data must be verified by Head of Department/ Head of Unit/ Hospital Director. 5. **How to collect:** Data is suggested to be collected from record book (refer to KPI MOH Guidelines).
Remarks	-

SERVICE STANDARD 25: MEDICAL ASSISTANT SERVICES STANDARDS – 1st EDITION

There is tracking and trending of the following specific performance indicator for the service:

Indicator 03	**Percentage of Medical Assistants in Emergency Services trained in Advanced Life Support (ALS) (Target: Non-specialist hospital: ≥30% Specialist hospital: ≥50%)**
Discipline	**Emergency Medical and Trauma Services**
Rationale	Advanced Trauma and Life Support (ALS) skills (as stipulated in the Malaysian Trauma Life Support and Advanced Trauma Life Support (MTLS/ALS/PALS) training programmes) is an important skill for all health personnel to possess and is an important element of Continuing Professional Development, which is a vital aspect of professionalism for Medical Assistants in the Emergency and Trauma Services to provide resuscitation for patients presenting life threatening conditions, hence improving the quality and safety of care provided. The use of defibrillator and other devices to resuscitate a patient who has collapsed is permissible only to those who are trained in MTLS/ALS/PALS.
Definition of Terms	**Advanced Life Support:** Advanced Life Support (**ALS**) is a set of life-saving protocols and skills that extend Basic Life Support to further support the circulation and provide an open airway and adequate ventilation (breathing). **Advanced Life Support Training:** ALS Training is a standardized national/international **course** teaching evidence-based resuscitation guidelines and skills to healthcare professionals. ALS includes procedures and skills that extend Basic Life Support (BLS) to further stabilize the patient. **Life Threatening Condition:** The **four conditions** considered immediately **life threatening** in an emergency situation are: Unconsciousness. No breathing or difficulty breathing. No pulse. The following are signs and symptoms of **life-threatening emergencies**: Respiratory distress or cessation of breathing. Severe chest pains. Shock. Uncontrolled bleeding.
Criteria	**Inclusion:** Medical Assistants who is working in the Emergency and Trauma Services <u>for more than 24 months.</u> **Exclusion**: 1. Medical Assistants who are transferred- in to the Emergency and Trauma Services for less than 24 months. 2. Medical Assistants who are currently working in the Emergency and Trauma Services for less than 24 months.
Type of indicator	Rate Based Structural Indicator

Numerator	Number of eligible Medical Assistants in the Emergency and Trauma Services trained in Advanced Life Support (ALS)
Denominator	Total Number of eligible Medical Assistants in the Emergency and Trauma Services
Formula	$\frac{\text{Numerator}}{\text{Denominator}} \times 100\%$
Standard	**Non-specialist hospital: ≥30%** **Specialist hospital: ≥50%)**
Data Collection	6 monthly
Remarks	-

SERVICE STANDARD 25: MEDICAL ASSISTANT SERVICES STANDARDS – 1st EDITION

There is tracking and trending of the following specific performance indicator for the service:

Indicator 04	**Percentage of Medical Assistants with post basic qualification and advance training in relevant disciplines.** **Target: ≥ 50% (for staff with at least 3 years working experience)**
Element	**Learning and Growth**
Rationale	Post basic qualification is an important element of Continuous Professional Development which is a formal education. Therefore continuous updating of the Medical Assistants in the respective disciplines/fields will ensure the current/latest management of patient care is being practiced.
Definition of Terms	**Post Basic Qualification**: This **qualification/certification** usually signifies that one has attained a **basic** level of higher education knowledge and competence in a particular field or occupation and are capable of applying such knowledge and competence in an occupation or role in the workplace. Post basic qualification may be obtained at baccalaureate level or as an extension of the diploma holder in specific disciplines of health care/other fields.
Criteria	**Inclusion:** All Medical Assistants with at least 3 years working experience and working in any discipline in the hospital/facility. **Exclusion**: All Medical Assistants with less than 3 years working experience and employed in the hospital/facility.
Type of indicator	Rate Based Structural Indicator
Numerator	Number of eligible Medical Assistants with post basic qualification and advance training in relevant disciplines.
Denominator	Total Number of eligible Medical Assistants in the Facility with at least 3 years working experience
Formula	$\frac{\text{Numerator}}{\text{Denominator}} \times 100\%$
Standard	≥ 50% (for staff with at least 3 years working experience)

Data Collection	6 monthly
Remarks	-

SERVICE STANDARD 25: MEDICAL ASSISTANT SERVICES STANDARDS – 1st EDITION

There is tracking and trending of the following specific performance indicator for the service:

Indicator 05	Peak Flow Rate (PEFR) Implementation for Asthma Patients in Asthma Bay by Medical Assistant (AMO)
Discipline	**Emergency & Trauma Services**
Dimension of Quality	**Clinical Effectiveness**
Rationale	1. Asthmatic condition is assessed by PEFR procedure before and after treatment. 2. The aim is to manage Asthma patients according to severity of asthma and priority of treatment. 3. To ensure all AMOs are compliant to Standard Operating Procedure (SOP) in management of Asthma (Refer to Emergency Care SOP for AMOs) 4. PEFR as a crucial indicator in managing Asthma concurrent with current SOP and Clinical Practice Guidelines (refer to CPG- Management of Asthma - MOH/P/PAK/354.17(GU) 5. AMO Clinical Audit in Asthma Care (2016-2017). Findings: Poor practice of pre and post PEFR among AMOs.
Definition of Terms	1. **PEFR:** Peak Expiratory Flow Rate 2. **PEFR before treatment**: Reading of Peak Flow Meter Device on patient before treatment is given 3. **PEFR after treatment**: Reading of Peak Flow Meter Device on patient after treatment is given 4. **Asthma Category**: 3 categories of asthma condition: Mild, Moderate and Severe Asthma 5. **Priority of treatment**: Asthma treatment are given according to the severity of asthma
Criteria	**Inclusion:** **1.** All mild asthma patients with Pre and Post PEFR treated in Asthma B ay **Exclusion**: 1. Patient refusal/uncooperative 2. Moderate & Severe Asthma 3. Unable to perform PEFR (patient factor and poor technique) 4. Patients with other lung conditions including congenital lung diseases in children or infants, foreign body and cardiovascular pathology that mimic asthma conditions

Type of indicator	Rate- based process indicator
Numerator	Number of all asthma patients with Pre and Post PEFR treated in Asthma Bay
Denominator	Total number of asthma patients treated in Asthma Bay
Formula	$\frac{\text{Numerator}}{\text{Denominator}} \times 100\%$
Standard	>80% number of all asthma patients with Pre and Post PEFR treated in Asthma Bay
Data Collection	1. **What** – Peak Flow Mater devices used for all patients in Asthma Bay. 2. **Where** – Data collection at Asthma Bay 3. **Who** – Data collected by Assistant Medical Officer on duty 4. **How Frequent** – Daily data collection with Monthly Reporting 5. **Who should verify** – All performance data will be verified by Head of Department 6. **How to collect** – Data is suggested to be collected from registration book/data base (system) in Asthma Bay
Remarks	Mild Asthma } Moderate Asthma } Severe Asthma } Refer to Clinical Practice Guidelines (MOH/P/PAK/354.17(GU)