

2026

7th Edition

MSQH

Malaysian Society for Quality in Health

PERFORMANCE
INDICATORS
MANUAL

@MSQH.COM.MY

PREFACE

It is with great commitment towards healthcare quality and patient safety that I present the MSQH 7th Edition Performance Indicator Manual. Performance indicators play an important role in helping healthcare organisations measure outcomes, improve governance, and drive continuous improvement in care delivery. Beyond reporting requirements, meaningful performance measurement enables organisations to better understand their systems, identify opportunities for improvement, and support more informed decision-making.

As healthcare delivery becomes increasingly complex, the need for structured, reliable, and transparent performance monitoring continues to grow. This manual provides a standardised framework for the development, measurement, reporting, and monitoring of performance indicators to support consistency, accountability, and organisational learning across healthcare services.

The indicators and methodologies outlined in this manual are intended not merely as technical requirements, but as practical tools to improve patient safety, quality of care, and good governance practices. The value of performance indicators ultimately lies not only in data collection, but in how organisations translate insights into meaningful improvements for patients and healthcare teams.

I encourage healthcare leaders, clinicians, and quality personnel to utilise this manual as a guide for responsible data stewardship, thoughtful analysis, and continuous quality improvement. Consistency, accuracy, and integrity in performance reporting remain essential in building trust, strengthening organisational resilience, and supporting accreditation readiness.

I would like to extend my appreciation to all contributors involved in the development of this manual. The MSQH 7th Edition Performance Indicator Manual will continue to serve as a valuable reference in supporting healthcare organisations towards safer care, stronger systems, and better patient outcomes.

Erica Lam

President of MSQH

Malaysian Society for Quality in Health

FOREWORD

The publication of the MSQH 7th Edition Performance Indicator Manual marks a significant step in strengthening our institution's commitment to systematic, transparent, and evidence-based performance monitoring. In an era where healthcare quality is increasingly defined by measurable outcomes and demonstrable compliance, the ability to interpret and apply performance indicators consistently is essential for maintaining organisational excellence.

What distinguishes this edition is not merely its comprehensiveness, but its intentionality. Each indicator has been constructed with rigour, grounded in evidence, validated against national and international benchmarks, and aligned with the evolving realities of Malaysian healthcare. The standardised framework which includes Titles, Rationale, Definitions, Formulas, Tracer Methodologies, and accountability pathways, is not merely administrative documentation. It is the architecture of a high-performing, self-improving institution.

The indicators within this manual are not just numbers; they are narratives of systems that function, patients who are safer, teams that are accountable, and of institutions that earn trust through transparency. When applied consistently, these indicators transform raw data into insight, and insight into action. They are the language through which quality speaks. Every organisation that embeds this framework into its governance rhythm is not just meeting accreditation requirements, it is building a culture of excellence that endures beyond any single survey cycle. The power of this manual lies not in its content alone, but in its practice. When every team owns its indicators, reviews its data, and acts on its findings, we collectively elevate the quality of care that millions of Malaysians deserve and depend upon.

On behalf of MSQH, I extend my deepest appreciation to the dedicated teams, clinical experts, and governance professionals whose intellectual rigour and tireless commitment have shaped this edition. This manual is your legacy and a testament to what Malaysian healthcare can achieve when it strives with purpose, measures with honesty, and improves without ceasing.

Datuk Dr. Heric Corray

CEO of MSQH

Malaysian Society for Quality in Health

EXECUTIVE SUMMARY

The Performance Indicator Manual represents a core component of the organisation's performance governance framework and is developed to align closely with the accreditation principles of the Malaysian Society for Quality in Health (MSQH). As Malaysia's nationally recognised healthcare accreditation body, MSQH promotes a culture of continuous improvement, patient safety, accountability, and service excellence across healthcare organisations. In line with this mandate, the manual establishes a consistent structure for defining, measuring, interpreting, and reporting performance indicators throughout the facility.

This manual consolidates all organisational indicators into a coherent, standardised format that ensures data accuracy, comparability, and reliability. Each indicator is presented using a vertical two-column layout, which clearly delineates operational requirements and stakeholder responsibilities. The structure outlines the key elements required by MSQH and other regulatory expectations, including -

1. Full Title to establish the indicator's official identity;
2. Rationale to justify why the indicator matters for safety, effectiveness, or governance;
3. Definition of Terms to remove ambiguity and ensure standardised interpretation;
4. Inclusion AND Exclusion Criteria to protect population accuracy and data validity;
5. Indicator Type to categorise the nature of performance being assessed;
6. Formula, Numerator, and Denominator to guide precise calculation;
7. Target to set expected performance standards;
8. Tracer Methodology to describe evidence requirements during assessments;
9. Data Collection Frequency to ensure timely monitoring cycles; and
10. Person In charge (PIC) to formalise ownership and accountability.

Together, these elements provide the clarity and consistency essential for MSQH accreditation compliance, internal audits, and organisational performance governance. By embedding these elements into routine monitoring, the manual supports traceability and demonstrates that the organisation's quality and safety measures are evidence-based, systematically monitored, and aligned with national and international expectations.

This manual is intended to be used as an operational reference across all clinical and non-clinical departments. Its purpose extends beyond documentation; it functions as a framework for leadership decision-making, frontline execution, and strategic planning. When applied consistently, the manual ensures that indicator reporting is -

1. Accurate, through the use of standard definitions and formulas;
2. Comparable, across departments and time periods;
3. Transparent, through clear documentation and traceable evidence;
4. Actionable, enabling governance teams to detect trends and risks; and
5. Accreditation-ready, aligned with MSQH requirements and audit expectations.

For new staff, the manual serves as an on boarding tool that introduces organisational expectations and performance terminology. For experienced staff, it acts as a guide for maintaining compliance, preparing for MSQH surveys, and strengthening continuous quality improvement initiatives.

Ultimately, this Manual supports the organisation's commitment to delivering safe, reliable, patient-centred care. Its consistent use reinforces organisational accountability, enhances performance intelligence, and ensures that the quality of care provided remains aligned with the standards promoted by MSQH and the wider national healthcare agenda.

TABLE OF CONTENTS

INSTRUCTION TO USE	9
LIST OF ABBREVIATIONS	11
Service Standard 01: Governance, Leadership and Direction	20
Service Standard 02: Environmental and Safety Services	30
Service Standard 03: Facility And Biomedical Equipment Management and Safety	37
Service Standard 04: Nursing Services	47
Service Standard 05: Prevention and Control of Infection	51
Service Standard 06: Patient and Family Rights	59
Service Standard 07: Health Information Management System (HIMS), Digital Care and Artificial Intelligence	64
Service Standard 08: Emergency Services	80
Service Standard 09: Clinical Services (Non-Specialist Facility)	113
Service Standard 09A:	123
Clinical Services (Medical Related Services).....	123
Service Standard 9B	138
Clinical Services (Surgical Related Services).....	138
Service Standard 09C: Clinical Services (Obstetrics and Gynaecology Services)	216
Service Standard 09D Clinical Services (Paediatric Services)	226
Service Standard 09E: Clinical Services (Cardiology)	236
Service Standard 09F: Clinical Services (Oncology)	250
Service Standard 09I: Clinical Services (Psychiatry and Mental Health).....	258
Service Standard 09K: Clinical Services (Palliative Care).....	264
Service Standard 09L: Clinical Services (Dental)	278
Service Standard 10: Anaesthetic Services	322
Service Standard 11: Operating Suite Services.....	333
Service Standard 12: Ambulatory Care Services - Day Care Services.....	353
Service Standard 12A: Ambulatory Care Services – Endoscopy Services.....	359
Service Standard 12B: Ambulatory Care Services – Ophthalmology Services	365
Service Standard 13: Critical Care Services (ICU/CCU/CICU/CRW/HDU/ Burns Care Unit)	371
Service Standard 13A Critical Care Services (SCN/NICU/PICU/PHDW)	384
Service Standard 13B: Critical Care Services – Labour Delivery Services	394
Service Standard 14: Radiology Services.....	404
Service Standard 15: Pathology Services.....	430
Service Standard 16: Blood Transfusion Services.....	438
Service Standard 17: Rehabilitation Medicine Services	446
Service Standard 17A: Allied Health Professional Services - Physiotherapy Services.....	455
Service Standard 17B Allied Health Professional Services – Occupational Therapy Services	468

Service Standard 17C: Allied Health Professional Services – Dietetic Services	476
Service Standard 17D: Allied Health Professional Services – Speech-Language Therapy Services	485
Service Standard 17E: Allied Health Professional Services – Audiology Services.....	498
Service Standard 17F: Allied Health Professional Services – Optometry Services.....	506
Service Standard 17H: Allied Health Professional Services – Medical Social Services	519
Service Standard 17I: Allied Health Professional Services – Psychology Counselling Services	526
Service Standard 17J: Allied Health Professional Services – Clinical Psychology Services	532
Service Standard 18: Pharmacy Services	540
Service Standard 19: Sterilising Supply Services (SSS)	548
Service Standard 20: Housekeeping Services.....	558
Service Standard 21: Linen and Laundry Services	563
Service Standard 22: Food Services	573
Service Standard 23: Forensic Medicine Services	580
Service Standard 23A: Mortuary Services	586
Service Standard 25: Medical Assistant Services.....	590
Service Standard 26: Clinical Research Centre.....	603
Service Standard 27: Deceased Organ and Tissue Donation and Promotion	609
APPENDIX A: Reporting Frequency Reference Guide.....	619
References.....	620

INSTRUCTION TO USE

This Performance Indicator Manual is organised around a standard set of elements that define how each indicator is to be interpreted, measured, and operationalised across the organisation. Understanding these elements is essential to ensure consistency, accuracy, and accountability in performance monitoring under the MSQH 7th Edition framework. The following section explains the purpose and function of each element in the manual.

1. **Full Title:** The Full Title provides the official name of the indicator and succinctly describes what is being measured. It establishes clarity for users and ensures alignment with the organisation's approved performance monitoring terminology.
2. **Rationale:** The Rationale outlines why the indicator is important, the specific quality or safety concern it addresses, and how it supports organisational governance. This section connects the indicator to its clinical relevance, strategic value, or regulatory expectations.
3. **Definition of Terms:** This element provides precise operational definitions for key terms used in the indicator. Clear definitions prevent misinterpretation and ensure that all departments collect, classify, and report data based on a common understanding.
4. **Inclusion and Exclusion Criteria:** These criteria specify exactly which cases, patients, or events should be counted and which should not. Strict adherence ensures that the indicator measures the intended population and that data remains valid and comparable across reporting periods.
5. **Indicator Type:** The Indicator Type classifies whether the measure is structural, process-based, outcome-based, or perception-based. This designation informs users of the nature of the indicator and supports alignment with national and international quality frameworks.
6. **Formula:** The Formula provides the mathematical method used to calculate the indicator. It must be applied exactly as written to protect data integrity and ensure comparability between units and over time.
7. **Numerator:** The Numerator defines the specific subset of cases or events counted in the indicator. It represents the component of interest being measured and must correspond directly to the formula.
8. **Denominator:** The Denominator specifies the total eligible population against which the numerator is measured. Proper denominator selection is essential to producing accurate rates and trends.
9. **Target:** The Target outlines the expected level of performance, whether based on internal benchmarks, national guidance, or accreditation expectations. Targets guide departments in understanding performance thresholds and improvement goals.

10. **Tracer Methodology:** This section outlines the evidence required to verify compliance during audits or accreditation surveys. It may include documentation review, interviews, process observations, or sample case verification. It ensures departments maintain appropriate records and preparedness for evaluation.
11. **Data Collection Frequency:** This element specifies how often data must be collected and reported. Consistent adherence to frequency requirements supports timely monitoring, governance oversight, and corrective action planning.
12. **Person In charge (PIC):** The Person In charge includes the Hospital Director and identifies the role responsible for ensuring accurate reporting, oversight, and follow-up on the indicator. Clear accountability strengthens governance and ensures organisational ownership of performance outcomes.

Together, these elements create a complete, standardised structure for performance indicator implementation. When used consistently, they support robust monitoring, reliable reporting, and alignment with MSQH accreditation requirements.

LIST OF ABBREVIATIONS

The following abbreviations are used throughout the MSQH 7th Edition Performance Indicator Manual. All terms are listed alphabetically for ease of reference.

Abbreviation	Full Form
A	
AAR	After-Action Review
ACS	Acute Coronary Syndrome
ADL	Activities of Daily Living
ALS	Advanced Life Support
AMI	Acute Myocardial Infarction
AMR	Antimicrobial Resistance
AMS	Antimicrobial Stewardship
AOR	Against Own Risk (Discharge Against Medical Advice)
AAA	Abdominal Aortic Aneurysm
ARHI	Access-Related Hand Ischemia
ASA	American Society of Anaesthesiologists (Classification)
AVF	Arterio-Venous Fistula
B	
BBA	Born Before Arrival
BCMS	Business Continuity Management System

Abbreviation	Full Form
BEMS	Building and Engineering Maintenance Services
BID	Brought-In-Dead
BCS	Breast Conserving Surgery
BCVA	Best Corrected Visual Acuity
BPH	Benign Prostatic Hyperplasia
C	
CABSI	Catheter-Associated Bloodstream Infection
CAP	Community-Acquired Pneumonia
CCU	Coronary Care Unit
CFR	Case Fatality Rate
CICU	Cardiac Intensive Care Unit
CLABSI	Central Line-Associated Bloodstream Infection
COSI	Client Oriented Scale of Improvement
CPD	Continuing Professional Development
CRC	Clinical Research Centre
CRE	Carbapenem-Resistant Enterobacteriaceae
CRW	Coronary Rehabilitation Ward
CS	Caesarean Section

Abbreviation	Full Form
CSSD	Central Sterile Services Department
CSSS	Central Sterilising Supply Services
CT	Computed Tomography
CABG	Coronary Artery Bypass Grafting
CKD	Chronic Kidney Disease
CSF	Cerebrospinal Fluid
CSR	Cataract Surgery Registry
CXR	Chest X-Ray
D	
DBR	Design-Based Research
DM	Diabetes Mellitus
E	
ECG	Electrocardiogram
EHR	Electronic Health Record
ESBL	Extended-Spectrum Beta-Lactamase
ED	Emergency Department
EF	Ejection Fraction
eGFR	Estimated Glomerular Filtration Rate

Abbreviation	Full Form
ENT	Ear, Nose and Throat
ERCP	Endoscopic Retrograde Cholangiopancreatography
ESRF	End-Stage Renal Failure
EVD	External Ventricular Drain
F	
FEMS	Facility and Engineering Maintenance Services
G	
GA	General Anaesthesia
fURS	Flexible Ureteroscopy
H	
HAI	Healthcare-Associated Infection
HCAI	Healthcare-Associated Infections
HCW	Healthcare Worker
HDU	High Dependency Unit
HIRAC	Hazard Identification, Risk Assessment and Control
HIMS	Health Information Management System
HIS	Hospital Information System
HOD	Head of Department

Abbreviation	Full Form
HPB	Hepatopancreatobiliary
HPE	Histopathology Examination
I	
ICD	International Classification of Diseases
ICN	Infection Control Nurse
ICU	Intensive Care Unit
IPC	Infection Prevention and Control
ISQua	International Society for Quality in Health Care
IV	Intravenous
IDL	Indirect Laryngoscopy
ISS	Ischaemic Steal Syndrome
K	
KKM	Kementerian Kesihatan Malaysia (Ministry of Health Malaysia)
KPI	Key Performance Indicator
L	
LIS	Laboratory Information System
LOS	Length of Stay
LV	Left Ventricular

Abbreviation	Full Form
M	
M&M	Mortality and Morbidity
MA	Medical Assistant
MBI	Modified Barthel Index
MMR	Maternal Mortality Rate
MOH	Ministry of Health Malaysia
MPSG	Malaysian Patient Safety Goals
MRMI	Modified Rivermead Mobility Index
MRSA	Methicillin-Resistant Staphylococcus aureus
MSQH	Malaysian Society for Quality in Health
MAP	Mean Arterial Pressure
MR	Magnetic Resonance
MRIC	Malaysian Registry of Intensive Care
N	
NHCC	National Heart and Coronary Care
NICU	Neonatal Intensive Care Unit
NED	National Eye Database
NHSN	National Healthcare Safety Network

Abbreviation	Full Form
O	
OSH	Occupational Safety and Health
ORL	Otorhinolaryngology
OT	Operating Theatre
P	
PACS	Picture Archiving and Communication System
PBM	Patient Blood Management
PCI	Prevention and Control of Infection
PEFR	Peak Expiratory Flow Rate
PGMI	Perfect, Good, Moderate, Inadequate (Mammography Image Quality)
PHDW	Paediatric High Dependency Ward
PI	Performance Indicator
PIC	Person In charge
PICU	Paediatric Intensive Care Unit
PPH	Postpartum Haemorrhage
PPM	Planned Preventive Maintenance
PCNL	Percutaneous Nephrolithotripsy
PVF	Performance Verification Form

Abbreviation Full Form	
Q	
QA	Quality Assurance
QIP	Quality Improvement Project
R	
RCA	Root Cause Analysis
RIS	Radiology Information System
RLN	Recurrent Laryngeal Nerve
S	
SCN	Special Care Nursery
SLT	Speech-Language Therapy
SBP	Systolic Blood Pressure
SFR	Stone-Free Rate
SIQ	Service Improvement Query
SIRS	Systemic Inflammatory Response Syndrome
SSI	Surgical Site Infection
T	
TAT	Turnaround Time
TIMI	Thrombolysis in Myocardial Infarction (Risk Score)

Abbreviation	Full Form
TJC	The Joint Commission
TCA	To Come Again (Follow-up Appointment)
TKR	Total Knee Replacement
TURP	Transurethral Resection of the Prostate
U	
UNHS	Universal Newborn Hearing Screening
UPOH	<i>Unit Perolehan Organ Hospital</i>
URS	Ureterorenoscopy
V	
V&V	Validation and Verification
VAP	Ventilator-Associated Pneumonia
VAS	Visual Analogue Scale
W	
WHO	World Health Organization
<i>* Abbreviations are listed alphabetically. Where an abbreviation carries multiple contextual meanings within this manual, the primary clinical or governance meaning is presented.</i>	

01

Service Standard 01: Governance, Leadership and Direction

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 01: Governance, Leadership and Direction

Performance Indicator Summary

There is tracking and trending of the following specific performance indicators for the service:

PI No	Indicator	Target	Reporting Frequency
01	Percentage of patients leaving hospital against medical advice relative to all patients hospitalised within a specified period	Downward trend	Monthly
02	Percentage of incidents/accidents during hospitalisation of patients as percentage of all admitted patients	Downward trends	Monthly
03	Hospital-wide patient satisfaction survey (six-monthly basis)	≥ 80% satisfaction level	Six-Monthly
04	Percentage of admitted patients experiencing access block in the emergency department	Downward trend	Monthly
05	In addition, healthcare facilities are required to monitor any other two (2) indicators with tracking and trending analysis to support its goal and objectives (This is hospital management related performance)		

Performance Indicator 01

Field	Indicator
Indicator title	Percentage of patients leaving hospital against medical advice relative to all patients hospitalised within a specified period.
Rationale	This indicator was selected because: 1. Incidence of patients discharge against medical advice (DAMA) or discharge At Own Risk (AOR), is still prevalent in hospitals especially those without specialist services. 2. DAMA discharge occurring frequently is a proxy indication of lack of confidence of the patients in the care given at the facility. 3. The occurrence of DAMA discharge should be minimised to include mainly those seeking higher levels of care or facilities with better amenities.
Definition of Terms	Discharge against medical advice (DAMA): Patient discharges himself/herself from the hospital when he/she is deemed not fit medically despite being advised against it.
Inclusion and Exclusion Criteria	Inclusion Criteria: Patients discharged DAMA but returned for re-admission Exclusion Criteria: Patients seeking higher levels of care or facilities with better amenities.
Indicator Type	Rate Based Process Indicator
Formula	$\left(\frac{\text{Total number of patients discharged against medical advice during the month}}{\text{Total number of patients admitted during the month}} \right) \times 100\%$
Numerator	Total number of patients discharged against medical advice during the month
Denominator	Total number of patients admitted during the month
Target	Downward Trend
Data Collection Frequency	Monthly
Tracer Methodology	Review of discharge documentation and DAMA/AOR consent forms; interviews with involved patients/families; RCA required when ≥ 3

Field	Indicator
	DAMA/AOR cases occur in a month.
Person In charge (PIC)	Director of Clinical Governance/Head of Medical Services or any appointed related person.

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of incidents/accidents during hospitalisation of patients as percentage of all admitted patients
Rationale	This indicator was selected because: 1. 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. 2. Incident Reporting ensures sharing of lessons learnt from incidents, root cause analysis and best practices in patient safety. 3. Incident Reporting facilitates patient and staff safety efforts including the reduction of risk to patients and staff.
Definition of Terms	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: 1. 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) 2. Adverse Event - An injury related to medical management rather than 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. 3. Errors are mishaps that have the potential to cause an adverse event. 4. Hazard refers to any threat to safety e.g. unsafe practices, conduct, equipment, labels and names. 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.

Field	Indicator
Inclusion and Exclusion Criteria	Inclusion Criteria: All accidents & incidents, near misses, adverse events Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	(Number of incidents and accidents experienced by all inpatients over a month / Total number of admissions over the same month) × 100%
Numerator	Number of incidents and accidents experienced by all inpatients over a month
Denominator	Total number of admissions over the same month
Target	Downward Trend
Data Collection Frequency	Monthly
Tracer Methodology	Review Incident Reporting (IR) forms, conduct spot audits of case notes, and verify RCA documentation for flagged events.
Person In charge (PIC)	Director of Risk Management/Quality and Safety Unit Leader or any other appointed related person.

Performance Indicator 03

Field	Indicator
Indicator title	Hospital-wide patient satisfaction survey (six-monthly basis)
Rationale	This indicator was selected because: 1. 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. 2. 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 and Exclusion Criteria	Inclusion Criteria: Patients who participates in the patient satisfaction survey (out-patients and in- patients) Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator
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 Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Audit of survey design and administration; analysis of outlier responses; comparison of internal results with national or historical trends.
Person In charge (PIC)	Quality Management Unit Head/Director of Governance or any other appointed related person.

Performance Indicator 04

Field	Indicator
Full Title	Percentage of admitted patients experiencing access block in the emergency department
Rationale	Access block is the inability of admitted patients to transfer from the ED to an appropriate inpatient bed within a defined timeframe — is consistently identified as a primary cause of ED overcrowding, hampering patient flow, straining resources, and exacerbating the crowding. In large EDs, 40% or more of staff time is spent caring for patients waiting for a bed, diverting clinical capacity from active emergency cases. Access block and prolonged ED length of stay are associated with higher patient mortality risk within 30 days, making this a safety-critical indicator. In the Malaysian context, this manifests as patients remaining in the Casualty/ED bay after admission decision, awaiting ward beds — consuming emergency resources, delaying new emergency intake, and compromising care quality. Monitoring access block supports system-level bed management, early escalation, and hospital-wide flow improvement.
Definition of Terms	Access Block: The time a patient spends in the ED between hospital admission decision and inpatient bed availability. Internationally, this threshold ranges from 4 to 8 hours; for this indicator, access block is defined as an ED stay of ≥8 hours post-admission decision without transfer to an inpatient bed. Admitted Patient: A patient for whom a formal admission decision has been documented by the treating physician. Inpatient Bed Availability: The time at which the patient physically departs the ED to an allocated ward/inpatient bed. ED Length of Stay (post-admission): Duration from time of admission decision to time of physical transfer out of ED.
Inclusion and Exclusion Criteria	Inclusion: All patients for whom a formal inpatient admission decision has been documented during the reporting period. Exclusion: Patients admitted directly to ICU/CCU/OT without ED boarding; patients who died in ED before transfer; patients transferred to another facility by clinical decision; patients with planned extended ED observation as per clinical protocol (e.g. short-stay observation unit).
Indicator Type	Rate-Based Process and Safety Indicator

Field	Indicator
Formula	Access Block Rate (%) = (Number of admitted patients who remained in the ED for ≥8 hours post-admission decision ÷ Total number of patients admitted from the ED during the same reporting period) × 100
Numerator	Number of admitted patients who remained in the ED for ≥8 hours after the formal admission decision was documented, during the reporting period
Denominator	Total number of patients formally admitted from the ED during the same reporting period.
Target	Downward trend; recommended facility threshold ≤10% of admitted patients experiencing access block. Facilities should establish internal benchmarks and escalate when access block rate exceeds 20% in any month.
Data Collection Frequency	Monthly
Tracer Methodology	Review ED timestamp records (triage system, admission documentation, ward transfer logs). Cross-check admission decision time against physical departure time from ED. Validate against bed management logs and ward admission registers. Random audit of 30 cases per month where data system is not fully automated.
Person In charge (PIC)	Head of Emergency Department / Bed Management Unit / Hospital Director or any appointed related person.

02

Service Standard 02: Environmental and Safety Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 02: Environmental and Safety Services

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of issues identified during Environmental and Safety Audits are closed or followed through	>50%	Three-monthly
02	Percentage of internal and external planned drills are carried out and documented including recommendations and followed through activities.	100%	Yearly
03	<u>Mandatory:</u> Percentage of workplace hazards identified and risks managed	100%	Monthly

Performance Indicator 01

Field	Indicator
Indicator title	Percentage of issues identified during Environmental and Safety Audits are closed or followed through
Rationale	This indicator was selected because: 1. 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 improvement of the environment and occupational safety and health to ensure staffs are aware of and work and provide care in a safe environment. 2. The Hospital Safety and Health Committee must undertake intense surveillance of environmental and safety issues including incidences such as 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 Environmental Quality Act 1974, Occupational Safety and Health Act 1994 and Private Healthcare Facilities and Services Act 1998, Regulations 2006
Inclusion and Exclusion Criteria	Inclusion Criteria: All hospital areas including onsite outsourced services areas Exclusion Criteria: Offsite outsourced areas
Indicator Type	Rate Based Process Indicator
Formula	(Total number of issues closed or followed through / Total number of issues identified during Environmental and Safety Audits) x 100
Numerator	Total number of issues closed or followed through.
Denominator	Total number of issues identified during Environmental and Safety Audits
Target	> 50%
Data Collection Frequency	Three-monthly
Tracer Methodology	Audit log validation against closure checklists; visual site inspections; OSH interviews for outstanding or partially resolved issues.
Person In-charge (PIC)	OSH Unit Officer/Safety and Health Committee Lead or any appointed related person.

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of internal and external planned drills are carried out and documented including recommendations and followed through activities.
Rationale	This indicator was selected as a generic indicator on staff awareness and practices on safety and health requirements because: 1. 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. 2. The Hospital Safety and Health Committee must undertake intense surveillance of the compliance and effectiveness of hospital disaster management plan.
Definition of Terms	Drills: Drills can be actual and/or table-top where appropriate. Actual evacuation drill is mandatory annually. Environmental, Safety and Health Requirements: As per Environmental Quality Act 1974, Occupational Safety and Health Act 1994 and Private Healthcare Facilities and Services Act 1998, Regulations 20063. Specific Aspects of Environmental, Safety and Health - As per MSQH Standard No. 02, these include: 1. Occupational Safety and Health 2. Fire Safety 3. Disaster Management: External Disaster and Internal Disaster 4. Hazardous Material and Recyclable Waste Management 5. Security Services 6. Vector and Pest Control
Inclusion and Exclusion Criteria	Inclusion Criteria: All relevant staff and activities involved in the respective disaster management types (including on site out-sourced service providers) Exclusion Criteria: Clinical Risk Management programme
Indicator Type	Rate Based Process Indicator
Formula	(Total number of drills conducted (internal and external disaster) with the issues closed or followed through / Total number of disasters identified in the Internal and External Disaster Plans) x 100

Field	Indicator
Numerator	Total number of drills conducted (internal and external disaster) with the issues closed or followed through
Denominator	Total number of disasters identified in the Internal and External Disaster Plans
Target	100%
Data Collection Frequency	Yearly
Tracer Methodology	Review drill logbooks, verify post-drill debrief documentation, and assess evidence of follow-up action.
PIC	Chairperson – Disaster Management Committee/OSH Unit Officer or any other related appointed person.

Performance Indicator 03 - Mandatory

Field	Indicator
Indicator title	Percentage of workplace hazards identified and risks 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 workplace and processes of 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	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 protect 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 the employees and any other persons 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 <u>Categorization of Hazards/Risks:</u> Hazards/risks can be grouped under various categories as listed below: 1. Bio-mechanical and Postural 2. Physical Environment and Workplace Design 3. Mechanical 4. Radiation 5. Electrical 6. Chemicals and Toxicity

Field	Indicator
	7. Biological and Human 8. Organizational and Procedural Arrangements e.g. sharps injury 9. Psycho- Social Environment and Task Design 10. Natural Environment <u>Levels of Risks:</u> Risk Assessments are based on two (2) key factors: 1. the severity of any injury/illness resulting from the hazard and the probability that the injury/illness will actually occur
Inclusion and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	(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 / Total number of workplace hazards occurring among staff, patients and visitors in all sectors of the Facility over a specific period) x 100
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
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 Frequency	Monthly
Tracer Methodology	Review hazard logs; validate hazard status using OSH checklists; verify closure and implementation during OSH observation rounds.
Person In-Charge (PIC)	OSH Officer/Facility Risk Coordinator or any other related appointed person.

03

Service Standard 03: Facility And Biomedical Equipment Management and Safety

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 03: Facility and Biomedical Equipment Management and Safety

Performance Indicator Summary

There is tracking and trending of specific performance indicators not limited to but at least five (5) of the following:

PI No	Indicator	Target	Reporting Frequency
01	Percentage of Planned Preventive Maintenance (PPM) being done on schedule	≥ 98% PPM compliance	Monthly
02	Percentage of system/service uptime	≥ 92% uptime for each system	Monthly
03	Response time to equipment failure	BEMS: Critical ≤15 minutes; Others equipment ≤2 hours. FEMS: Emergency ≤15 minutes; Non-Emergency ≤2 hours.	Monthly
04	Repair time – percentage of repairs completed within 7 working days	≥ 95% of repairs completed within 7 working days.	Monthly
05	Any two other indicators to be identified by the hospital		

Performance Indicator 01

Field	Indicator
Indicator title	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: 1. Planned preventive maintenance of facilities and equipment in a hospital is an important component of Facility Management to provide safe patient care. 2. 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 Preventive 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. 3. Long-term benefits of preventive maintenance include: improved system reliability, reduced replacement costs, decreased system downtime and 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 and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	(Numbers of asset undergone planned preventive maintenance for the month / Numbers of asset scheduled for planned preventive maintenance for the month) x 100
Numerator	Numbers of asset undergone planned preventive maintenance for the month

Field	Indicator
Denominator	Numbers of asset scheduled for planned preventive maintenance for the month X 100%
Target	98%
Data Collection Frequency	Monthly
Tracer Methodology	Review PPM audit logs against the maintenance schedule; inspect asset conditions; verify documentation of completed PPM activities.
Person In charge (PIC)	Facility Manager/Biomedical Engineering Lead or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of system/service uptime
Rationale	This indicator was selected as a generic indicator of the delivery of safe patient care in the hospital because: 1. The cost and consequences of downtime are the reasons why uptime is essential. Even small periods of downtime of critical equipment/systems can be devastating for the patient's safety. 2. The uptime 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	Uptime: The term uptime is a measure of systems/services/equipment reliability to provide its function for the specific period expressed as the percentage of time it is working, available/operational to provide for its primary function. Reliability, availability, recovery and unavailability are related concepts. Uptime is the opposite of downtime.² Downtime: Downtime is used to refer to periods when a system/equipment is unavailable to perform its primary function. 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).
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All systems/service/equipment/assets in the healthcare facility used to provide patient care for the month 2. All assets used in the facility to enable staff to carry out their clinical and administrative functions for the month Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	(The uptime periods of each systems/equipment/asset in the facility that had provided its primary function for the month / Total numbers of each type of critical system/ equipment/asset used in the facility for the month) x 100
Numerator	The uptime periods of each systems/equipment/asset in the facility that had provided its primary function for the month

Field	Indicator
Denominator	Total numbers of each type of critical system/ equipment/asset used in the facility for the month
Target	92%
Data Collection Frequency	Monthly
Tracer Methodology	Check system logs; validate uptime using BEMS/FEMS records; inspect alert systems; review utility performance test documentation.
Person In charge (PIC)	Facility Manager/Biomedical Engineer/IT Infrastructure Lead or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	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: 1. Prompt repairs of existing systems, facilities and equipment in a hospital is an important element of Facility Management to provide safe patient care. 2. 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. Example: BEMS – Critical care equipment – 15 minutes, other equipment – 2 hours FEMS – Emergency – 15 minutes, non-emergency – 2 hours
Inclusion and Exclusion Criteria	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
Indicator Type	Response time
Formula	$(\text{Related Numerator} / \text{Related Denominator}) \times 100$
Numerator	<u>Critical Care</u> 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 <u>Other Service Areas</u> 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	<u>Critical Care</u>

Field	Indicator
	Total numbers of calls received from critical care areas of the Facility on equipment failure for the month <u>Other Service Areas</u> Total numbers of calls received from other service areas of the Facility on equipment failure for the month
Target	BEMS 1. Critical care equipment – 15 minutes 2. Other equipment – 2 hours FEMS 1. Emergency – 15 minutes 2. Non-emergency – 2 hours
Data Collection Frequency	Monthly
Tracer Methodology	Review equipment failure call logs; compare response times against SLA thresholds; conduct Root Cause Analysis (RCA) for any delays exceeding established limits.
Person In charge (PIC)	Facility Manager/Biomedical Engineering Supervisor or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator title	Repair Time - Percentage of Repair /Work Orders completed within 7 working days)
Rationale	This indicator was selected as a generic indicator of the delivery of safe patient care in the hospital because: 1. Maintenance and repair work is needed for existing systems and equipment already in place. 2. Prompt maintenance of facilities and equipment in a hospital is an important element of Facility Management to provide safe patient care. 3. 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 <u>repair works implemented</u> 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	Repair Time (Mean Time to repair): Mean Time to Repair is a measure of the maintainability of a repairable item which tells the average time required to repair a specific item or component and return it to working status. It is a basic measure of the maintainability of equipment and parts. Work Order: 1. A means of communication for maintenance, repair and installation needs from approved staff to the Maintenance Department. 2. 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. Completed on Schedule: Completed on time - The critical path of a work order 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 to complete the work order or repair work according to the agreed time/schedule.

Field	Indicator
Inclusion and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator
Numerator	Numbers of repair/work orders completed within 7 working days as scheduled for the month
Denominator	Numbers of repair/work orders issued for the month X 100%
Target	7 working days
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check work order timestamps; verify escalation logs; assess repair turnaround times in high-risk zones (e.g., OT, ICU, HDU).
Person In charge (PIC)	Facility Manager/Maintenance Supervisor or any other related appointed person.

04

Service Standard 04: Nursing Services

Service Standard 04: Nursing Services**Performance Indicator Summary**

There is tracking and trending of specific performance indicators for improvement of the Nursing Services/patient care as follows:

Field	Indicator	Target	Reporting Frequency
01	Percentage of intravenous (IV) line complications (needles out, redness of skin, infection sites, extravasation)	≤0.5%	Monthly

Performance Indicator 01

Field	Indicator
Full Title	Percentage of intravenous (IV) line complications (needles out, redness of skin, infection sites, extravasation)
Rationale	This indicator was selected because: 1. 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. 2. Intravenous line complications have 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	Intravenous line complications include infection of site, extravasation and needles being out. 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. 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 and Exclusion Criteria	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
Indicator Type	Rate-Based Process Indicator
Formula	IV Complication Rate (%) = (Total number of incidences of (I/V) line site complications among in-patients during the study period ÷ Total number of intravenous (I/V) lines set up during the study period) × 100
Numerator	Total number of incidences of (I/V) line site complications among in-patients during the study period
Denominator	Total number of intravenous (I/V) lines set up during the study period
Target	≤0.5%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Random audits of IV records, Observation of IV techniques, Staff interviews on protocol awareness.
Person In charge (PIC)	Nursing Supervisor/Head of Nursing Services or any other related appointed person.

05

Service Standard 05: Prevention and Control of Infection

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 05: Prevention and Control of Infection

Performance Indicator Summary

There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following including the mandatory indicator.

PI No	Indicator	Target	Reporting Frequency
01	Percentage of staff trained in prevention and control of infection practices	100% (new staff) and 85% (existing staff).	Monthly
02	Percentage of healthcare associated infections (HCAI)	≤5%	Monthly
03	Number of resistant organisms to antibiotics within a specified period	MRSA 0.3%, ESBL-E. coli 0.2%, ESBL-Klebsiella pneumonia <0.3%, CRE < 0.1%	Monthly

For antimicrobial stewardship, there is tracking and trending of specific performance indicators not limited to but at least one (1) of the following:

01	Percentage of appropriate and complete antimicrobial prescriptions
02	Percentage of prescriptions with indications that are in keeping with national or local antimicrobial guidelines
03	Percentage of empirical prescriptions that are reviewed by 72 hours

Performance Indicator 01

Field	Indicator
Indicator title	Percentage of staff trained in prevention and control of infection practices
Rationale	This indicator was selected because: 1. Healthcare Associated Infection (HAI) is a significant problem in hospitals and has an impact on the safety of patient, staff and visitor. 2. 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 Terms	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 and Exclusion Criteria	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 Exclusion Criteria: description
Indicator Type	NA Rate Based Process Indicator
Formula	$\left(\frac{\text{Total number of existing staff in the facility (all categories including all on site outsourced service providers) who have been given training in prevention and control of infection}}{\text{Total number of existing staff in the facility (all categories including all on site outsourced service providers) at a given point of time.}} \right) \times 100\%$
Numerator	Total number of existing staff in the facility (all categories including all on site outsourced service providers) who have been given training in prevention and control of infection

Field	Indicator
Denominator	Total number of existing staff in the facility (all categories including all on site outsourced 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 Frequency	Monthly
Tracer Methodology	Cross-check HR records against ICN training logs; verify training attendance; conduct staff interviews on IPC competency and protocol understanding.
Person In charge (PIC)	Infection Control Nurse (ICN)/Infection Control Committee Chair or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of Healthcare Associated Infections (HCAI)
Rationale	This indicator was selected because: 1. 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. 2. Healthcare Associated Infection (HAI) is a significant potential problem in hospitals and has an important impact on the safety of patient, staff and visitor. 3. 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 Terms	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 and Exclusion Criteria	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. Rate Based Process Indicator
Indicator Type	Rate Based Process Indicator

Field	Indicator
Formula	(Number of patients with Healthcare Associate Infection (HCAI) in the hospital on the day of survey / Number of hospitalised patients in the hospital on the day of survey) x 100
Numerator	Number of patients with Healthcare Associate Infection (HCAI) in the hospital on the day of survey
Denominator	Number of hospitalised patients in the hospital on the day of survey
Target	< 5%
Data Collection Frequency	Monthly
Tracer Methodology	Review clinical notes, confirm diagnoses via laboratory results, and validate logbook entries against active case lists.
Person In charge (PIC)	Infection Control Nurse (ICN)/Surveillance Team Lead or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	Number of Resistant Organisms to Antibiotics within a specified period of time
Rationale	This indicator was selected because: 1. 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. 2. Monitoring antimicrobial use or antimicrobial surveillance will serve as a tool for: a. Comparison in antimicrobial use by having national benchmark data (aggregated from all hospitals); b. Identifying and developing strategies to improve antimicrobial control through multidisciplinary 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) 3. 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. 4. 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 Terms	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 <i>Staphylococcus aureus</i> 2. VRE - vancomycin-resistant enterococci 3. ESBLs - extended-spectrum beta lactamases (resistant to cephalosporins and monobactams)

Field	Indicator
	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), 8. MDR-TB - multidrug-resistant tuberculosis. 9. CRE- Carbapenem - resistant Enterobacteriaceae
Inclusion and Exclusion Criteria	Inclusion Criteria: The number of patients admitted to the hospital and had developed resistance to antibiotics Exclusion Criteria: Pre-existing infection prior to admission
Indicator Type	Sentinel event
Formula	Numerator / Denominator
Numerator	Number of patients developing resistance to antibiotics within a specified period of time.
Denominator	NA
Target	MRSA 0.3%, ESBL-E. coli 0.2%, ESBL-Klebsiella pneumonia <0.3%, CRE < 0.1%
Data Collection Frequency	Monthly
Tracer Methodology	Review antibiogram profiles; correlate findings with clinical documentation; monitor AMS/pharmacy alerts for resistant organism emergence.
Person In charge (PIC)	Infection Control Committee/AMS Team Lead or any other related appointed person.

06

Service Standard 06: Patient and Family Rights

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 06: Patient and Family Rights

Performance Indicator Summary

There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following including the mandatory indicator.

PI No	Indicator	Target	Reporting Frequency
01	Percentage of patients receiving written Patient and Family Rights (PFR) information on admission	>95%	Three-monthly
02	Percentage of staff aware of and trained in the Patient and Family Rights (PFR) policy	>90%	Yearly
03	Percentage of translated patient rights materials available in common local languages	100% of core documents translated into at least 3 local languages	Six-Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of patients receiving written Patient and Family Rights (PFR) information on admission
Rationale	To ensure patients are informed of their rights upon admission, reinforcing transparency and empowerment.
Definition of Terms	PFR Information: Any printed or digital material detailing patient rights under Standard 6
Inclusion and Exclusion Criteria	Inclusion Criteria: All admitted patients. Exclusion Criteria: Emergency cases discharged within 2 hours.
Indicator Type	Process Indicator (Patient Communication)
Formula	(Patients receiving PFR info ÷ Total admissions) × 100
Numerator	Number of patients receiving written PFR information upon admission.
Denominator	Total number of patient admissions in the same reporting period.
Target	>95%
Data Collection Frequency	Three-monthly
Tracer Methodology	Random audit of admission checklists and patient feedback.
PIC – Person In charge	Admission Supervisor, Quality Unit or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of staff aware of and trained in the Patient and Family Rights (PFR) policy
Rationale	Staff awareness and training on patient rights are critical for consistent policy implementation and ethical care delivery.
Definition of Terms	Staff Aware: Documented participation in PFR orientation or training within the past 12 months.
Inclusion and Exclusion Criteria	Inclusion Criteria: All clinical and frontline administrative staff. Exclusion Criteria: Non-patient-facing staff.
Indicator Type	Structural Input Indicator
Formula	$(\text{Trained staff} \div \text{Total clinical staff}) \times 100$
Numerator	Number of staff who have completed documented PFR policy training in the last 12 months.
Denominator	Total number of staff in clinical and patient-facing roles.
Target	>90%
Data Collection Frequency	Annually
Tracer Methodology	Review of training logs, attendance sheets, and HR records.
PIC – Person In charge	Training Coordinator, Nursing Manager or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of translated patient rights materials available in common local languages
Rationale	Availability of translated materials supports inclusive communication and cultural respect, aligning with ISQua Principle 1.
Definition of Terms	Common Local Languages: Bahasa Malaysia, English, Mandarin, Tamil (or as per facility demographic data).
Inclusion and Exclusion Criteria	Inclusion Criteria: All PFR materials publicly displayed or distributed. Exclusion Criteria: Internal SOPs or training manuals.
Indicator Type	Structural Indicator (Language AND Inclusion)
Formula	$(\text{Translated PFR documents} \div \text{Required PFR documents}) \times 100$
Numerator	Number of translated PFR materials available in at least 3 local languages.
Denominator	Total number of required PFR informational materials (as per official patient rights list).
Target	100% of core documents translated into at least 3 local languages
Data Collection Frequency	Six-monthly
Tracer Methodology	Spot check of patient rights boards, brochures, and online materials.
PIC – Person In charge	Corporate Communication Officer, Quality Manager or any other related appointed person.

07

Service Standard 07: Health Information Management System (HIMS), Digital Care and Artificial Intelligence

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 07: Health Information Management System (HIMS), Digital Care and Artificial Intelligence

Performance Indicator Summary

There is tracking and trending of specific performance indicators not limited to but at least four (4) for HIMS-adopted hospital; at least two (2) for non-HIMS-adopted hospital of the following including the mandatory indicator.

PI No	Indicator	Target	Reporting Frequency
01	Percentage of medical reports prepared within the stipulated period	>90% for all facility types	Monthly
02	Percentage of medical records that were dispatched within 72 hours of discharge	>95% timely dispatch	Monthly
03	Percentage of patient details completeness rate for mandatory data elements	≥ 95%	Three-monthly
04	Percentage of digital consent completeness rate	≥ 95%	Annually
05	Percentage of ai tool audit completion rate	100%	Annually
06	Percentage of critical digital care platform(s) uptime/availability	≥ 99.5%	Monthly
07	Percentage of users reporting satisfaction with key digital care tools	≥ 85% (Response rate ≥ 60%)	As per audit cycle

Performance Indicator 01

Field	Indicator
Indicator title	Percentage of Medical Reports prepared within the stipulated period
Rationale	This indicator was selected because: 1. 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. 2. Timeliness of preparation of medical reports is an indication of the efficiency of the Health Information Management Services
Definition of Terms	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. Stipulated Period: The preparation of completed requests for medical report must meet the following norms: - Secondary and Tertiary Care (Public and 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. Reference: Technical Specifications of Hospital Performance Indicators for Accountability (HPIA) and Specific Indicators Version 7.1 2019
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. Plain medical reports 2. Report for Insurance claims Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	(Number of Medical Reports completed within the stipulated period in the month ÷ Total number of requests for Medical Reports in the month) X 100%
Numerator	Number of Medical Reports completed within the stipulated period in the month
Denominator	Total number of requests for Medical Reports in the month
Target	>90%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Audit report logs, check timestamps from request to issue, verify against patient case files.
PIC – Person In charge	Head of department, Health Information Management Services, medical records unit or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of Medical Records that were dispatched within 72 hours of discharge
Rationale	This indicator was selected because: 1. There is a need to hasten the preparation of case summaries for continuity of care. 2. Timeliness of preparation of case summaries and dispatch of patient's medical records to the medical records department is an indication of the timely access to records for continuity of care.
Definition of Terms	Medical Records: Medical Records refers to all records and/or documents relating to the treatment of a patient including but not limited to family histories, medical histories, report on clinical findings and diagnosis, laboratory test results, x-rays, reports of examination and/or evaluation and all outpatient/ hospital admission/discharge records. 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). Dispatch: Dispatch is to send off in this case the patient's medical records with speed to a destination (medical records department) within the specified time. The completion of case summaries and dispatch of patient's medical records must meet the following: 1. Within 72 hours of discharge: ≥ 72 working hours after the patient are discharged. 2. The period of completing case summaries is to be calculated exclusive of public holidays.
Inclusion and Exclusion Criteria	Inclusion Criteria: All cases discharged in a given month Exclusion Criteria: NA

Field	Indicator
Indicator Type	Rate Based Process Indicator
Formula	(Number of case summaries completed within 72 working hours of discharge in a month ÷ Total number of patients discharged in a month) X 100%
Numerator	Number of case summaries completed within 72 working hours of discharge in a month
Denominator	Total number of patients discharged in a month
Target	>95%
Data Collection Frequency	Monthly
Tracer Methodology	Review discharge logs, match dispatch timestamps, cross-check with EHR.
PIC – Person In charge	Head of department, Health Information Management Services, medical records department, or any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of patient details completeness rate for mandatory data elements
Rationale	Ensures completeness of essential patient data elements to support safe, accurate, and continuous care delivery.
Definition of Terms	Mandatory Data Elements: The minimum dataset required for every patient record comprises eight elements: patient identifiers, allergy status (documented value or 'No Known Allergy' confirmed), primary diagnosis, active medication list, clinician identification, date and time stamps for all entries, presenting complaint, and discharge or follow-up disposition. Complete record: All 8 elements above are present and non-null. A blank or partially filled field does not qualify.
Inclusion and Exclusion Criteria	Inclusion Criteria: All records/encounters audited for the defined dataset. Exclusion Criteria: Emergency encounters where documentation is deferred within the first 2 hours of arrival; records affected by verified system downtime (IT incident log required as supporting evidence).
Indicator Type	Rate-Based Process Indicator
Formula	$(\text{Number of complete records} \div \text{Total records audited}) \times 100$
Numerator	Number of records/encounters audited where all mandatory data elements are complete.
Denominator	Total number of records/encounters audited for the same dataset in the reporting period.
Target	≥ 95%
Data Collection Frequency	Three-monthly
Tracer Methodology	Audit sampled patient records against facility-defined dataset checklist. Verify completeness of required fields and timestamp integrity. Minimum sample: 30 records per ward/unit or 10% of total encounters (whichever is greater). Auditor scores each record binary: Complete / Incomplete against the 8-element list above.
PIC – Person In charge	Health Information Manager, Medical Records Officer or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	Percentage of digital consent completeness rate
Rationale	This indicator was selected to monitor the completeness of consent documentation in electronic systems. Informed consent is a legal and ethical requirement under the Medical Act 1971, Malaysian Medical Council guidelines, and the Private Healthcare Facilities and Services Act 1998 (for private facilities). Digital consent provides a verifiable audit trail with date/time stamps and authorised person credentials, reducing risks associated with missing, illegible, or incomplete paper-based consent forms. Monitoring the completeness rate ensures that electronic systems are utilised as intended and that no procedures are performed without properly documented patient consent.
Definition of Terms	Digital Consent: Valid consent documented and retrievable in electronic system including date/time and authorized person. Valid Consent: Consent is considered valid when it is documented in the electronic system with a date and time stamp, the name and credential of the authorizing person, the specific procedure or AI tool disclosed, and confirmation that the patient or guardian was given opportunity to ask questions. A consent form that is present but unsigned, undated, or lacks clinician identification does not qualify as valid.
Inclusion and Exclusion Criteria	Inclusion: All procedures/encounters requiring consent. Exclusion: Emergency procedures where consent could not be obtained prior to intervention (documented as emergency waiver in the record); procedures where the patient lacked legal capacity and a lawful surrogate decision-maker process was followed and separately documented.
Indicator Type	Rate-Based Process Indicator
Formula	$(\text{Valid consent documented} \div \text{Total eligible procedures}) \times 100$
Numerator	Number of procedures/encounters requiring consent where valid consent is documented and retrievable.
Denominator	Total number of eligible procedures/encounters requiring consent in the same reporting period.
Target	≥ 95%

Field	Indicator
Data Collection Frequency	Annually Note: Given the legal and patient rights implications of consent documentation, a mid-year spot-check (minimum 10 records per unit) is recommended to detect systemic gaps before the annual audit cycle.
Tracer Methodology	Review electronic consent records; verify presence of date/time, authorized signatory, and system retrievability. Minimum sample: 20 records per unit or 10% of total eligible procedures (whichever is greater). Each record is scored binary: Valid / Invalid against the four-element definition above. Invalid records are flagged for root cause review.
PIC – Person In charge	Clinical Governance Lead, Health Information Manager or any other related appointed person.

Performance Indicator 05

Field	Indicator
Indicator Title	Percentage of AI Tool Audit Completion Rate
Rationale	AI tools deployed in clinical and operational settings carry inherent risks of performance degradation, safety incidents, and governance gaps if left unmonitored. Without a structured audit cycle, facilities may continue operating AI tools that have drifted from their validated baseline, generating outputs that inform clinical decisions without any human oversight checkpoint. This indicator ensures that every AI tool in active use is subject to a documented, periodic review covering performance, safety, drift, and governance — the four dimensions that collectively determine whether a tool remains fit for purpose. A 100% audit completion target reflects the non-negotiable nature of AI governance in healthcare: unlike process efficiency indicators where partial attainment is acceptable, a single unaudited AI tool represents an uncontrolled risk to patient safety and institutional accountability. This indicator also supports Malaysia's national commitment to responsible AI adoption in the public sector, consistent with the MOSTI National AI Ethics and Governance Guidelines and the <i>Jabatan Digital Negara</i> Public Sector AI Adaptation Guidelines, and aligns with international best practice under the EU AI Act risk classification framework. Reference: 1. Garis Panduan Tadbir Urus dan Etika Kecerdasan Buatan (AIGE), Kementerian Sains, Teknologi dan Inovasi (MOSTI), September 2024 2. Garis Panduan Pengadaptasian Kecerdasan Buatan (AI) Sektor Awam, Jabatan Digital Negara (JDN), Kementerian Digital, Februari 2025 3. EU AI Act — Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonized rules on artificial intelligence, in force 1 August 2024

Field	Indicator
Definition of Terms	AI Tool Audit: A structured annual review covering four mandatory components: 1. Performance review against baseline metrics — compare current tool output metrics against the documented deployment baseline using the vendor or facility performance report; 2. Safety incident log reviewed and closed or escalated — verify that all logged incidents for the reporting year carry a resolution status, with no entry left unresolved without formal escalation documentation; 3. Drift check conducted with results recorded — run a validation dataset through the tool and document whether output distribution has shifted from baseline, performed by the IT team or vendor; 4. Governance sign-off obtained from the designated authority — the IT governance lead or clinical informatics officer signs and dates a confirmation that the tool is cleared to continue operating. A single AI tool audit checklist per tool, with all four sections completed and signed, serves as the audit evidence. An audit is considered complete only when all four components are documented. Partial completion does not qualify for numerator counting.
Inclusion and Exclusion Criteria	Inclusion Criteria: All AI tools in active use. Exclusion Criteria: AI tools decommissioned or suspended from active use prior to audit scheduling in the reporting year; tools deployed within the last 60 days of the calendar year (first audit due in the following cycle). Active use is defined as any AI tool used to support at least one clinical or operational decision within the reporting year, as recorded in the facility's AI Tool Register maintained by the IT Governance Lead.
Indicator Type	Rate-Based Process Indicator
Formula	$(\text{AI tools audited} \div \text{Total AI tools in use}) \times 100$
Numerator	Number of AI tools in active use that have completed audit/review within the calendar year.
Denominator	Total number of AI tools in active use in the facility.
Target	100%
Data Collection Frequency	Annually

Field	Indicator
Tracer Methodology	Review AI governance logs, audit reports, and documentation of performance, safety, and drift validation. This is a census indicator — all tools in the AI Tool Register are reviewed, not a sample. For each tool, the auditor verifies the existence of a completed AI Tool Audit Checklist with all four components signed off. Missing any one component = audit incomplete for that tool.
PIC – Person In charge	IT Governance Lead, Clinical Informatics Officer or any other related appointed person.

Performance Indicator 06

Field	Indicator
Indicator Title	Percentage of Critical Digital Care Platform(s) Uptime/Availability
Rationale	Critical digital care platforms are directly integrated into clinical workflows — their unavailability during scheduled service hours can delay diagnosis, interrupt remote monitoring, and compromise patient safety. Unlike administrative systems where downtime causes inconvenience, downtime in clinical digital platforms carries direct harm potential. A ≥99.5% uptime target reflects the operational reality that even 0.5% unplanned downtime in a monthly cycle represents approximately 3.6 hours of clinical system unavailability — an unacceptable exposure for platforms supporting active patient care.
Definition of Terms	Critical Digital Care Platform: A platform qualifies as critical if its unplanned unavailability directly interrupts clinical care delivery. The facility shall maintain a registered list of platforms meeting this definition, reviewed annually by the IT Manager and Digital Health Lead. Platforms not on the registered list are not in scope for this indicator. Unplanned Downtime: Any unscheduled outage or degradation affecting clinical functionality. Scheduled Service Hours: The agreed operational hours for each platform as documented in the system's service level agreement (SLA) or facility IT policy. Downtime outside scheduled hours does not count against the numerator.
Inclusion and Exclusion Criteria	Inclusion: All critical digital platforms used for clinical care. Exclusion: Planned maintenance windows communicated to clinical users at least 24 hours in advance and scheduled outside peak clinical hours; downtime caused by upstream infrastructure failures outside the facility's control (e.g. national network outages), provided the incident is formally documented with evidence.
Indicator Type	Rate-Based Process Indicator
Formula	$(\text{Available minutes} \div \text{Total scheduled service minutes}) \times 100$
Numerator	Total minutes platform was available and functional during scheduled hours.
Denominator	Total scheduled service minutes in the reporting period.
Target	≥ 99.5%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	For each platform on the registered list, retrieves the monthly system uptime log, cross-references against any downtime incident reports, and verifies against the IT monitoring dashboard. Available minutes are calculated per platform and aggregated. Planned maintenance windows and excluded downtime events must be supported by documentary evidence to be removed from the denominator.
PIC – Person In charge	IT Manager, Digital Health Lead or any other related appointed person.

Performance Indicator 07

Field	Indicator
Indicator Title	Percentage of Users Reporting Satisfaction with Key Digital Care Tools
Rationale	Ensures digital care tools meet the usability expectations of both staff and patients to support effective and continuous clinical operations. A tool that is available but not usable is not fit for purpose — satisfaction data closes the gap between technical performance and real-world clinical experience.
Definition of Terms	Satisfied User: A respondent who rates satisfaction as "Satisfied" or "Very Satisfied" (or equivalent positive rating on a 5-point Likert scale) on the validated survey instrument. Key Digital Care Tools: Tools to be surveyed may include EMR system, teleconsultation platform, patient portal, mobile health application, etc. The facility shall define and maintain the list of tools in scope for each survey cycle. Response Rate Requirement (60%): A survey cycle that does not achieve a minimum 60% response rate does not constitute valid evidence for this indicator. A low response rate produces unreliable data that cannot support meaningful decision-making.
Inclusion and Exclusion Criteria	Inclusion Criteria: All staff and patients who used the specified digital tool and responded to the survey during the reporting cycle. Exclusion Criteria: Survey cycles where the minimum 60% response rate is not achieved are invalid for reporting purposes and must be repeated.
Indicator Type	Rate-Based Process Indicator
Formula	$(\text{Number of satisfied respondents} \div \text{Total number of survey respondents}) \times 100$
Numerator	Number of survey respondents (staff or patients) who rate their satisfaction with the specified digital tool as "Satisfied" or "Very Satisfied" on the validated survey instrument during the reporting cycle.
Denominator	Total number of survey respondents for the specified digital tool and user group during the reporting cycle. Valid only where response rate $\geq 60\%$ is confirmed.
Target	$\geq 85\%$

Field	Indicator
Data Collection Frequency	As per audit cycle.
Tracer Methodology	Administer validated satisfaction survey to staff and patient user groups separately for each tool in scope. Verify response rate meets the 60% minimum threshold before accepting results as valid. Review survey results, response rate records, and documented action plans taken following satisfaction findings. Staff and patients are surveyed separately as they may report different experiences with the same tool.
PIC – Person In charge	IT Manager, Digital Health Lead or any other related appointed person.

08

Service Standard 08: Emergency Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 08: Emergency Services

Performance Indicator Summary

There is tracking and trending of specific performance indicators not limited to but at least two (2) of the following including the mandatory indicator.

PI No.	Indicator Title	Target	Reporting Frequency
01	Percentage of inappropriate triaging (under triaging): Category Green patients who should have been triaged as Category Red	$\leq 0.5\%$	Monthly
02 (i)	Waiting time relative to triage category: Malaysian Triage Category (MTC) Red seen Immediately	100%	Monthly
02 (ii)	Waiting time relative to triage category: Malaysian Triage Category (MTC) Yellow seen within 30 minutes	$\geq 85\%$	Monthly
02 (iii)	Waiting time relative to triage category: Malaysian Triage Category (MTC) Green seen within 90 minutes	$> 70\%$	Monthly
03	Unplanned return of patients seen at Emergency Department within 24 hours for a similar complaint	Sentinel Event	Monthly
04	Percentage of Intravenous (IV) Tranexamic Acid given in trauma patients with severe haemorrhage within 60 minutes of first medical contact	$>70\%$	Six-monthly
05	Electrocardiogram taken within 10 minutes after triaging as possible Acute Coronary Syndrome patients	100%	Monthly
06	Thrombolytic Therapy within 30 minutes after hospital arrival in patient with acute myocardial infarction "Door to Needle" time	90%	Monthly

PI No.	Indicator Title	Target	Reporting Frequency
07	Percentage of patient who received Thrombolytic Therapy (TT) in patients admitted for acute myocardial infarction	90%	Monthly
Prehospital Care			
08	Average Activation Time (Chute Time)	< 60 seconds	Monthly
09	Response Time Compliance — Priority 1 (≤ 15 Minutes)	> 90%	Monthly
10	Average Turnaround Time at Emergency Department	< 30 minutes	Monthly
11	Fleet Availability	> 95%	Monthly
12	Ambulance Accident Rate	0 (Zero accidents)	Monthly
13	Percentage of hospitals receiving pre-arrival notification from prehospital care team for patients suspected of having hyperacute stroke	≥ 80%	Monthly

Performance Indicator 01

Mandatory:

Field	Indicator
Indicator Title	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 of 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 Triage System in the Emergency Department (ED) to ensure that critically ill patients are not missed and categorized as “non-critical”.
Definition of Terms	Under- triaged: Critically ill patient (MTC RED) who was triaged as non- critical patient (MTC GREEN)
Inclusion AND Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	Number of MTC GREEN patients who should have been triaged as MTC RED ÷ Total number of MTC GREEN patients × 100%
Numerator	Number of MTC GREEN patients who should have been triaged as MTC RED
Denominator	Total number of MTC GREEN patients

Field	Indicator
Target	≤ 0.5%
Data Collection Frequency	Monthly
Tracer Methodology	Review triage records and patient clinical notes. Verify triage category assigned versus clinical condition. Audit re-triage or escalation cases. Cross-check cases flagged for inappropriate triaging. Interview triage staff on decision-making process.
PIC – Person In charge	Emergency Department Head / Triage Nurse Lead or any other appointed related person.

Performance Indicator 02 (i)

Field	Indicator
Indicator Title	Waiting time relative to triage category: Malaysian Triage Category (MTC) Red seen Immediately (100%)
Rationale	This indicator was selected because: i. Waiting time relative to triage category is the clinical performance indicator for the Emergency Department. ii. Triage is an essential function in the Emergency Department where many patients may present simultaneously. iii. 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. iv. 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	Patients in MTC Red seen Immediately: Initiation of assessment and/or treatment within 5 minutes as defined in MTC
Inclusion and Exclusion Criteria	Inclusion Criteria: Patients triaged to MTC Red Exclusion Criteria: i. During Mass Casualty Incident as defined by local Disaster Action Plan ii. Patients retriaged from green/ yellow
Indicator Type	Waiting Time
Formula	The number of patients allocated MTC Red who are attended by ED staff IMMEDIATELY ÷ The total number of patients attending ED who are triaged to MTC Red in the time period under study × 100%
Numerator	The number of patients allocated MTC Red who are attended by ED staff IMMEDIATELY
Denominator	The total number of patients attending ED who are triaged to MTC Red in the time period under study.
Target	100%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review triage records and timestamp logs. Verify time from registration to first assessment. Audit compliance with immediate response requirement. Cross-check cases with delays. Interview ED staff on triage response workflow.
PIC – Person In charge	Emergency Department Head / Triage Nurse Lead or any other appointed related person.

Performance Indicator 02 (ii)

Field	Indicator
Indicator Title	Waiting time relative to triage category: Malaysian Triage Category (MTC) Yellow seen within 30 minutes (≥85%)
Rationale	This indicator was selected because: i. Waiting time relative to triage category is the clinical performance indicator for the Emergency Department ii. Triage is an essential function in the Emergency Department where many patients may present simultaneously. iii. 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. iv. 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	Patients in MTC Yellow seen within 30 minutes: Initiation of assessment and/or treatment within 30 minutes
Inclusion and Exclusion Criteria	Inclusion Criteria: Patients triaged to MTC Yellow Exclusion Criteria: i. During Mass Casualty Incident as defined by local Disaster Action Plan ii. Patients retriaged from green/ yellow
Indicator Type	Waiting Time
Formula	(The number of patients allocated MTC Yellow who are attended by ED Staff within 30 minutes ÷ The total number of patients attending ED who are triaged to MTC Yellow in the time period under study) × 100%
Numerator	The number of patients allocated MTC Yellow who are attended by ED Staff within 30 minutes
Denominator	The total number of patients attending ED who are triaged to MTC Yellow in the time period under study
Target	≥ 85%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review triage and consultation timestamps. Verify 30-minute threshold compliance. Audit delayed cases and reasons. Cross-check patient flow records. Interview ED staff on waiting time management.
PIC – Person In charge	Emergency Department Head / Triage Nurse Lead / Quality Unit or any other appointed related person

Performance Indicator 02 (iii)

Field	Indicator
Indicator Title	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	Patients in MTC Green seen within 90 minutes: Initiation of assessment and/or treatment within 90 minutes
Inclusion and Exclusion Criteria	Inclusion Criteria: Patients triaged to MTC Green Exclusion Criteria: - Non-emergency cases: G4 (OPD cold cases seen at Emergency Department as defined in MTC) <i>Klinik Rawatan Pesakit Selepas Waktu Pejabat</i> (in Ministry of Health Hospitals)
Indicator Type	Waiting Time
Formula	The number of patients allocated MTC Green who are attended by ED Staff within ≥ 90 minutes $\div$ The total number of patients attending ED who are triaged to MTC Green in the time period under study $\times 100\%$
Numerator	The number of patients allocated MTC Green who are attended by ED Staff within ≥ 90 minutes
Denominator	The total number of patients attending ED who are triaged to MTC Green in the time period under study.
Target	> 70%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review triage and consultation timestamps. Verify compliance with 90-minute threshold. Audit delayed cases and patient flow bottlenecks. Cross-check documentation and triage categorization. Interview ED staff on operational challenges.
PIC – Person In charge	Emergency Department Head / Triage Nurse Lead / Quality Unit or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Unplanned return of patients seen at Emergency Department within 24 hours for a similar complaint
Rationale	This indicator was selected because: i. It is a proxy indicator on safety and effectiveness of care in the Emergency Department. ii. 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. iii. 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 and Exclusion Criteria	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
Indicator Type	Sentinel Event
Formula	Number of unplanned return of patients seen at the Emergency Department within 24 hours for similar complaint in the month
Numerator	Number of unplanned return of patients seen at the Emergency Department within 24 hours for similar complaint in the month
Denominator	-
Target	Sentinel Event
Data Collection Frequency	Monthly
Tracer Methodology	Review ED attendance records and revisit logs. Verify timing of return within 24 hours. Cross-check presenting complaints for similarity. Audit clinical notes for initial management. Interview ED staff on case review and follow-up actions.
PIC – Person In charge	Emergency Department Head / Medical Officer or any other appointed related person

Performance Indicator 04

Field	Indicator
Indicator title	Percentage of Intravenous Tranexamic Acid given in trauma patients with severe haemorrhage within sixty (60) minutes of first medical contact
Rationale	This indicator was selected because: 1. Polytrauma is one of the major causes of death worldwide, with motor-vehicle accident as the ninth leading cause of death globally and is predicted to become the third leading cause of death and disability by 2020. 2. Haemorrhage is responsible in a third of in hospital trauma death and contribute to death from multi-organ failure. 3. In CRASH 2 Study, Tranexamic Acid safely reduced the risk of death in bleeding trauma patients down to 2.8% and the need of transfusion by a third.
Definition of Terms	Trauma: Sudden physical injury caused by external forces for example motor-vehicle accidents, fall from heights, penetrating injuries, gunshot wounds and others. Severe haemorrhage is defined by (A and/or B): A. Evidence of bleeding: External bleeding from obvious open wounds; Internal bleeding detected from clinical examination. B. Physiological parameters: SBP < 90 mmHg and/or HR > 110 bpm Tranexamic Acid is a synthetic derivative of amino acid lysine that inhibit fibrinolysis by blocking the lysine binding side of plasminogen.
Inclusion and Exclusion Criteria	Inclusion: 1. All trauma patients presenting to the Emergency Department with severe haemorrhage. 2. Trauma patients who were given Tranexamic Acid by Pre-Hospital Responder. Exclusion: 1. Contraindication to Tranexamic Acid: (i) Allergic reaction; (ii) Patients with known pro-coagulation disorder for example Pulmonary Embolism, Anti-phospholipid syndrome, Cavernous Sinus Thrombosis and others. 2. Injuries occurred more than three (3) hours. 3. Patient who is less than eighteen (18) years old. 4. Cases when Tranexamic Acid is not beneficial.

Field	Indicator
Indicator Type	Rate-based Process Indicator
Formula	Numerator / Denominator × 100%
Numerator	The number of trauma patients with severe haemorrhage who received intravenous Tranexamic Acid within sixty (60) minutes of arrival, including those patients who had been given Tranexamic Acid by Pre-Hospital responders.
Denominator	Total number of trauma patients with severe haemorrhage presented in Emergency Department
Target	≥ 70%
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review of trauma patients presenting with severe haemorrhage within reporting period. Trace from Emergency Department triage documentation → haemodynamic parameters (SBP, HR) confirming severe haemorrhage classification → Tranexamic Acid administration record (time, route, dose) → patient case notes verifying administration within sixty (60) minutes of arrival. For Pre-Hospital TXA cases, cross-check ambulance/pre-hospital records against Emergency Department handover documentation. Verify inclusion/exclusion criteria compliance through clinical notes review. Sample selection: Random or consecutive sampling from TXA record book/patient case notes during the reporting period.
PIC – Person In charge	Emergency Department Head / Medical Officer or any other appointed related person

Performance Indicator 05

Field	Indicator
Indicator title	Electrocardiogram taken within 10 minutes after triaging as possible Acute Coronary Syndrome patients
Rationale	This indicator was selected because: 1. Acute Myocardial Infarction is a frequent cause of hospital death nationally. 2. Patients with acute coronary syndrome (ACS) should have an electrocardiogram taken immediately upon arrival at the hospital. 3. This indicator measures quality of care and adherence to practice guidelines.
Definition of Terms	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) 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 and Exclusion Criteria	Inclusion Criteria: All cases with complaints of chest pain and suspected acute myocardial infarction Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients triaged as possible Acute Coronary Syndrome and electrocardiogram done within 10 minutes
Denominator	Total number of patients triaged as possible Acute Coronary Syndrome and electrocardiogram done

Field	Indicator
Target	100%
Data Collection Frequency	Monthly
Tracer Methodology	Review of Emergency Department triage records, electrocardiogram (ECG) timestamps, patient medical records, and Acute Coronary Syndrome (ACS) case documentation to determine compliance with electrocardiogram taken within 10 minutes upon triaging.
Person In charge (PIC)	Emergency Department Head / Medical Officer or any other appointed related person.

Performance Indicator 06

Field	Indicator
Indicator Title	Thrombolytic Therapy (TT) within 30 Minutes After Hospital Arrival — "Door to Needle" Time
Rationale	This indicator was selected because: 1. Acute Myocardial Infarction is a frequent cause of hospital death nationally. 2. 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 and Exclusion Criteria	Inclusion Criteria: All cases with Acute Myocardial Infarction with indications for Thrombolytic Therapy. Exclusion Criteria: NA
Indicator Type	Rate-based process indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100\%$
Numerator	Number of Acute Myocardial Infarction patients who had Thrombolytic Therapy done within 30 minutes after hospital arrival and diagnosis is made
Denominator	Total number of Acute Myocardial Infarction patients admitted and who received Thrombolytic Therapy
Target	90%
Data Collection Frequency	Monthly
Tracer Methodology	Review of Emergency Department records, patient case notes, and thrombolysis administration logs. Auditor to verify time of hospital

Field	Indicator
	arrival/ED registration against time of Thrombolytic Therapy administration for all eligible AMI cases in the reporting period.
Person In charge (PIC)	Head of Cardiology Department / Head of Emergency Department / Cardiologist / Emergency Physician / or any other related appointed person.

Performance Indicator 07

Field	Indicator
Indicator Title	Percentage of patients who received Thrombolytic Therapy (TT) in patients admitted for acute myocardial infarction
Rationale	This indicator was selected because: 1. Acute Myocardial Infarction is a frequent cause of hospital death nationally. 2. It is important to measure the quality of care and adherence to practice guidelines.
Definition of Terms	Thrombolytic Therapy (TT): Thrombolytic Therapy 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 and Exclusion Criteria	Inclusion Criteria: All cases with Acute Myocardial Infarction with indications for Thrombolytic Therapy. Exclusion Criteria: NA
Indicator Type	Rate-based process indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100\%$
Numerator	Number of AMI patients who were admitted and received Thrombolytic Therapy
Denominator	Total number of AMI patients who were admitted with no contraindications for TT
Target	90%
Data Collection Frequency	Monthly
Tracer Methodology	Review of patient case notes, admission records, and thrombolysis administration logs. Auditor to verify AMI diagnosis, presence or

Field	Indicator
	absence of contraindications, and whether TT was administered for all eligible AMI admissions in the reporting period.
Person In charge (PIC)	Head of Cardiology Department / Cardiologist / Head of Emergency Department / Emergency Physician / or any other related appointed person.

Performance Indicator 08 - Prehospital Care

Field	Indicator
Indicator Title	Average Activation Time (Chute Time)
Rationale	Activation time (or 'chute time') is the interval from dispatch notification to wheels rolling and is one of the few response-time components fully under EMS-agency control. NFPA 1710 sets an aspirational 60-second turnout-time benchmark for $\geq 90\%$ of incidents, a value adopted by most urban services internationally. El Sayed (2012) classifies chute time as a process indicator, while NHTSA's national performance-measure framework lists 'time to dispatch' and 'time to en-route' as core operational measures. References: El Sayed, M. J. (2012). Emergency Medicine International, 2012, 161630. NFPA (2020). NFPA 1710: Standard for the organization and deployment of fire suppression operations. Myers et al. (2008). Prehospital Emergency Care, 12(2), 141–151. U.S. DOT NHTSA (2009). EMS Performance Measures.
Definition of Terms	Activation Time (Chute Time): The time interval measured from the moment the crew receives dispatch notification to the moment the ambulance is en route (wheels rolling). Wheels-Rolling Time: The time recorded when the ambulance begins movement towards the incident. Call-Received Time: The time the dispatch notification is received by the crew.
Inclusion and Exclusion Criteria	Inclusion Criteria: All emergency dispatch calls received by the ambulance crew. Exclusion Criteria: Calls cancelled prior to crew activation.
Indicator Type	Process indicator (continuous/average)
Formula	$(\text{Wheels-Rolling Time} - \text{Call-Received Time}) \div \text{Total Calls}$
Numerator	Sum of all individual activation times (in seconds) across all calls in the reporting period

Field	Indicator
Denominator	Total number of calls activated in the reporting period
Target	< 60 seconds
Data Collection Frequency	Monthly
Tracer Methodology	Review of Computer-Aided Dispatch (CAD) system logs or equivalent. Auditor to verify dispatch notification timestamp against wheels-rolling timestamp for a random sample of calls. Minimum sample: 30 calls or 10% of monthly activations, whichever is greater.
Person In charge (PIC)	Head of Emergency Medical Services / Fleet/Operations Manager / Dispatch Supervisor / or any other related appointed person.

Performance Indicator 09 - Prehospital Care

Field	Indicator
Indicator Title	Response Time Compliance — Priority 1 (≤ 15 Minutes)
Rationale	Response-time compliance, expressed on a fractile (90th-percentile) basis, is the most widely reported process measure in EMS systems globally. Although the often-cited urban benchmark is 8 minutes 59 seconds at the 90th percentile, rural and mixed-density services typically adopt a 15-minute / 90% target consistent with U.S. National EMS Performance Measures and NFPA-derived guidance. Recent literature cautions that response time alone is an incomplete proxy for clinical quality and must be reported alongside clinical and patient-experience measures. References: El Sayed, M. J. (2012). Emergency Medicine International, 2012, 161630. Pons & Markovchick (2002). Journal of Emergency Medicine, 23(1), 43–48. Patterson et al. (2016). Open Access Emergency Medicine, 8, 1–6. Kupas et al. (2024). NAEMSP Joint Position Statement on EMS Performance Measures. U.S. DOT NHTSA (2009). EMS Performance Measures. Mustafa, A. K. bin. (2025). Doctoral dissertation. Malaysia.
Definition of Terms	Priority 1 (P1) call: A life-threatening emergency dispatch requiring immediate response. Response time: The interval from the time the call is received at the dispatch centre to the time the first ambulance arrives at the scene. Compliance: The percentage of P1 calls where the ambulance arrives within the stipulated 15-minute threshold.
Inclusion and Exclusion Criteria	Inclusion Criteria: All Priority 1 (P1) emergency dispatch calls. Exclusion Criteria: 1. Calls cancelled prior to ambulance arrival at scene. 2. Calls where road closure, natural disaster, or force majeure prevented access
Indicator Type	Rate-based process indicator

Field	Indicator
Formula	$(\text{Number of P1 calls reached within 15 minutes} \div \text{Total P1 calls}) \times 100\%$
Numerator	Number of P1 calls where ambulance arrived at scene within 15 minutes of dispatch
Denominator	Total number of P1 calls dispatched in the reporting period
Target	> 90%
Data Collection Frequency	Monthly
Tracer Methodology	Review of Computer-Aided Dispatch (CAD) system logs or equivalent. Auditor to verify call-received timestamp against scene-arrival timestamp for all P1 calls in the reporting period. Minimum sample: 30 calls or 10% of monthly P1 dispatches, whichever is greater.
Person In charge (PIC)	Head of Emergency Medical Services / Dispatch Supervisor / Operations Manager / or any other related appointed person.

Performance Indicator 10 - Prehospital Care

Field	Indicator
Indicator Title	Average Turnaround Time at Emergency Department
Rationale	Ambulance Patient Offload Time (APOT) — frequently used interchangeably with ED turnaround time — directly affects unit availability for the next call. Cone et al. (2014) show that turnaround time is a valid proxy for offload time in services that do not record a dedicated offload timestamp. The NAEMSP resource document on ED offload delay identifies 20 minutes / 90% as the most commonly adopted national target; a California statewide cohort study found a state mean of 42.8 minutes, illustrating the magnitude of the problem and its impact on response capacity. References: Cone, Davidson & Nguyen (2014). Prehospital Emergency Care, 18(2), 181–187. Vilke et al. (2011). Prehospital Emergency Care, 15(4), 555–561. Castillo et al. (2024). Western Journal of Emergency Medicine, 25(6). Carter & Grierson (2007). Prehospital Emergency Care, 11(4), 421–426. Patterson et al. (2006). Annals of Emergency Medicine, 47(2), 142–151.
Definition of Terms	Turnaround Time at ED: The time interval from the ambulance's arrival at the Emergency Department to the time the unit is available and cleared for the next call. Arrival-at-ED Time: Timestamp recorded when the ambulance arrives at the Emergency Department. Unit-Available Time: Timestamp recorded when the crew notifies dispatch that the unit is available for the next call. Note: Turnaround time encompasses patient handover, documentation completion, vehicle restocking, and crew clearance.
Inclusion and Exclusion Criteria	Inclusion Criteria: All ambulance transports to the Emergency Department. Exclusion Criteria: 1. Inter-facility transfers not presenting to the ED. 2. Cases where unit-available time was not recorded due to system error.

Field	Indicator
Indicator Type	Process indicator (continuous/average)
Formula	$(\text{Unit-Available Time} - \text{Arrival-at-ED Time}) \div \text{Total Transports}$
Numerator	Sum of all individual turnaround times (in minutes) at ED across all transports in the reporting period
Denominator	Total number of ambulance transports to the Emergency Department in the reporting period
Target	< 30 minutes
Data Collection Frequency	Monthly
Tracer Methodology	Review of Computer-Aided Dispatch (CAD) system logs and ED handover records or equivalent. Auditor to verify arrival-at-ED timestamp against unit-available timestamp for a random sample of transports. Minimum sample: 30 transports or 10% of monthly ED transports, whichever is greater. or any other related appointed person.
Person In charge (PIC)	Head of Emergency Medical Services / ED Liaison Officer / Operations Manager / or any other related appointed person.

Performance Indicator 11 - Prehospital Care

Field	Indicator
Indicator Title	Fleet Availability
Rationale	Fleet availability quantifies the proportion of operational hours each ambulance is mission-ready, calculated using the reliability formula $MTBF / (MTBF + MTTR)$. Industry guidance for emergency-vehicle fleets recommends a 93%+ acceptable threshold and $\geq 95\%$ for world-class performance, with downtime above 10% triggering capacity erosion. Mustafa (2025) identifies vehicle and equipment adequacy as one of the structural elements of prehospital safety in Malaysia. References: Maintainly (2024). Fleet Maintenance KPIs: 12 Essential Metrics to Track. Heavy Vehicle Inspection (2026). Fleet Maintenance KPIs that Reduce Downtime & Costs. Almaazmi, A. (2024). International Journal of Occupational Safety and Health, 14(2), 282–293. Mustafa, A. K. bin. (2025). Doctoral dissertation. Malaysia. SAE International (2010). KKK-A-1822F Federal Specification for the Star-of-Life Ambulance.
Definition of Terms	Fleet Availability: The percentage of scheduled ambulance operational days on which each vehicle is available and mission-ready (not undergoing unplanned maintenance or repair). Total Days Vehicle Available: Total number of days in the reporting period that each ambulance unit was operational and available for dispatch. Total Ambulance Days in Month: Total possible operational days for all ambulance units in the fleet (number of units $\times$ number of days in reporting period). MTBF (Mean Time Between Failures): Average time between vehicle breakdowns. MTTR (Mean Time to Repair): Average time taken to restore a vehicle to operational status.
Inclusion and Exclusion Criteria	Inclusion Criteria: All ambulance units registered and assigned to the fleet during the reporting period. Exclusion Criteria:

Field	Indicator
	1. Vehicles undergoing planned scheduled maintenance (preventive maintenance). 2. Vehicles retired or decommissioned during the reporting period.
Indicator Type	Rate-based process indicator
Formula	$(\text{Total Days Vehicle Available} \div \text{Total Ambulance Days in Month}) \times 100\%$
Numerator	Total number of days all ambulance units were available and operational in the reporting period
Denominator	Total possible operational days for all ambulance units in the fleet (units × days in reporting period)
Target	> 95%
Data Collection Frequency	Monthly
Tracer Methodology	Review of fleet maintenance logs, vehicle availability records, and workshop repair records. Auditor to verify days available against days in scheduled service for each unit. All units in the fleet to be reviewed monthly.
Person In charge (PIC)	Fleet/Operations Manager / Vehicle Maintenance Officer / Head of Emergency Medical Services / or any other related appointed person.

Performance Indicator 12 - Prehospital Care

Field	Indicator
Indicator Title	Ambulance Accident Rate
Rationale	Ambulance crashes represent a significant occupational safety and public safety risk. Maguire et al. (2002, 2014) documented that ambulance crashes result in fatalities and serious injuries to crew, patients, and the public. Saunders & Heye (1994) identified preventable contributing factors including driver fatigue, excessive speed, and inadequate training. Salwana et al. (2017) reported trends of ambulance accidents in Malaysia, highlighting the need for systematic monitoring. A target of zero accidents reflects the aspirational standard for any emergency fleet and is consistent with zero-harm frameworks applied in healthcare safety. References: Maguire et al. (2002). <i>Annals of Emergency Medicine</i>, 40(6), 625–632. Maguire et al. (2014). <i>Medical Journal of Australia</i>, 200(8), 477–480. Saunders & Heye (1994). <i>Prehospital and Disaster Medicine</i>, 9(2), 118–124. Salwana et al. (2017). <i>Trends of Ambulance Accidents in Malaysia</i>. Watanabe et al. (2019). <i>Annals of Emergency Medicine</i>, 74(1), 101–109. Mustafa, A. K. bin. (2025). <i>Doctoral dissertation</i>. Malaysia.
Definition of Terms	Ambulance-involved accident: Any collision, incident, or unplanned event involving an ambulance vehicle that results in damage to the vehicle, injury to crew, patient, or third party, or property damage. This includes accidents occurring: 1. While responding to an emergency call (lights and sirens). 2. During patient transport. 3. During non-emergency movement of the vehicle. Near-miss incidents are recorded separately and not counted in this indicator.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All ambulance-involved accidents regardless of severity. 2. Accidents occurring during emergency response, patient transport, and non-emergency vehicle movement. Exclusion Criteria:

Field	Indicator
	1. Near-miss incidents (no contact/damage). 2. Accidents involving vehicles not under active fleet deployment (e.g. vehicles in workshop).
Indicator Type	Count-based safety indicator (Patient Safety Indicator)
Formula	Total number of ambulance-involved accidents in the reporting period (count)
Numerator	Total number of ambulance-involved accidents in the reporting period
Denominator	Not applicable (count-based indicator)
Target	0 (Zero accidents)
Data Collection Frequency	Monthly
Tracer Methodology	Review of accident/incident report forms, police reports, and vehicle damage records. All ambulance-involved accidents to be reported and verified. Auditor to confirm documentation of each incident including date, location, circumstances, and outcome.
Person In charge (PIC)	Head of Emergency Medical Services / Fleet/Operations Manager/ or any other related appointed person.

Performance Indicator 13 - Prehospital Care

Field	Indicator
Indicator Title	Percentage of hospitals receiving pre-arrival notification from prehospital care team for patients suspected of having hyperacute stroke
Rationale	Pre-arrival notification by the prehospital care team is a critical process measure in the hyperacute management of ischaemic stroke. The CPG Management of Ischaemic Stroke 3rd Edition (Malaysia, 2020/2023) emphasises the role of Emergency Medical Services (EMS) in reducing total ischaemic time through timely communication and pre-hospital coordination with receiving hospitals. EMS pre-arrival notification allows the hospital stroke team to be activated prior to patient arrival, enabling parallel preparation of the emergency department, imaging suite, and thrombolysis resources. Evidence consistently demonstrates that pre-arrival notification is independently associated with: 1. Shorter door-to-CT times (Patel et al., 2011; Frontiers in Stroke, 2024) 2. Shorter door-to-needle times for IV thrombolysis (PMC, 2010; Neurology, 2025) 3. Reduced in-hospital mortality (Nielsen et al., 2022) The AHA/ASA and the National Association of EMS Physicians support EMS pre-notification as a Class I recommendation in the management of acute ischaemic stroke (Powers et al., 2019; Kupas et al., 2024). The GWTG-Stroke quality improvement programme (AHA/ASA) includes EMS pre-notification as a tracked quality metric. References: CPG Management of Ischaemic Stroke, 3rd Edition. Malaysian Society of Neurosciences / MOH Malaysia, 2020 (updated 2023). Chapter 7: Emergency Medicine Services. Patel, M. D. et al. (2011). Prehospital notification by EMS reduces delays in stroke evaluation. <i>Stroke</i>, 42(8), 2263–2268. Nielsen, V. M. et al. (2022). EMS prenotification is associated with reduced odds of in-hospital mortality in stroke patients. <i>Prehospital Emergency Care</i>, 27, 639–645. Powers, W. J. et al. (2019). Guidelines for the early management of patients with acute ischaemic stroke. <i>Stroke</i>, 50(12), e344–e418. (AHA/ASA) Frontiers in Stroke (2024). Identification of specific recommendations for prehospital stroke care associated with shorter door-to-CT times.

Field	Indicator
Definition of Terms	Pre-arrival notification: A formal communication from the prehospital care team (e.g. ambulance crew, EMRS personnel) to the receiving hospital Emergency Department and/or stroke team, made prior to the patient's arrival, to alert the hospital of a suspected hyperacute stroke case en route. Prehospital care team: Any trained prehospital personnel transporting the patient to hospital, including Emergency Medical Response System (EMRS) crew, ambulance medical staff, or medical officers accompanying the patient. Hyperacute stroke: Acute ischaemic stroke within the time window eligible for reperfusion therapy (generally within 4.5 hours of symptom onset for IV thrombolysis, or within 24 hours for endovascular thrombectomy where applicable), as defined in the CPG Management of Ischaemic Stroke 3rd Edition (Malaysia, 2020/2023). Suspected hyperacute stroke: A patient identified by the prehospital care team as having signs and symptoms consistent with acute stroke using a validated prehospital stroke screening tool (e.g. FAST, CPSS, LAMS) and/or clinical judgement, within the eligible treatment time window. Receiving hospital: The hospital designated to receive the patient for hyperacute stroke management, including thrombolysis-capable and thrombectomy-capable centres.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All patients transported by the prehospital care team (EMRS/ambulance) to a hospital with a suspected diagnosis of hyperacute stroke. 2. Patients transported within the hyperacute time window (generally ≤ 4.5 hours from last known well time or symptom onset). 3. All EMS-transported suspected stroke patients regardless of final confirmed diagnosis. Exclusion Criteria: 1. Patients who self-present or arrive by private transport (no prehospital care team involved). 2. Inter-facility transfers where pre-arrival notification was not applicable or not feasible. 3. Patients for whom the time window for hyperacute intervention had already elapsed prior to EMS contact. 4. Cases where communication infrastructure failure (documented) prevented notification.

Field	Indicator
Indicator Type	Rate-based process indicator
Formula	$\left(\frac{\text{Number of EMS-transported suspected hyperacute stroke patients for whom the hospital received pre-arrival notification}}{\text{Total number of EMS-transported suspected hyperacute stroke patients}} \right) \times 100\%$
Numerator	Number of EMS-transported suspected hyperacute stroke patients for whom the receiving hospital documented receipt of pre-arrival notification from the prehospital care team
Denominator	Total number of patients transported by the prehospital care team (EMRS/ambulance) to the hospital with a suspected diagnosis of hyperacute stroke in the reporting period
Target	≥ 80%
Data Collection Frequency	Monthly
Tracer Methodology	Review of Emergency Department intake records, EMS run reports/ambulance call sheets, and stroke registry documentation. Auditor to verify for each EMS-transported suspected stroke case whether a pre-arrival notification was received and documented by the ED or stroke team prior to patient arrival. Evidence of notification may include: documented ambulance pre-alert in ED triage record, stroke team activation log, or EMRS communication records. Minimum sample: all EMS-transported suspected stroke cases in the reporting month.
Person In charge (PIC)	Head of Emergency Department / Stroke Unit Neurologist / Stroke Coordinator / EMS/EMRS Liaison Officer / or any other related appointed person.

09

Service Standard 09: Clinical Services (Non- Specialist Facility)

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09: Clinical Services (Non-Specialist Facility)

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	<u>Mandatory:</u> Percentage of mortality and morbidity audits/meetings being conducted in the department with documentation of cases discussed	Minimum of 30% of all mortalities and 30% all morbidities discussed in a year)	Six-monthly
02	Percentage of unplanned re-admission within 48 hours of discharge	<0.5%.	Monthly
03	Case fatality rate for two diseases (facility to decide based on local disease prevalence)	Facility-defined benchmark based on national data or historical baseline	Monthly
04	Notification of infectious diseases within the stipulated period of time	100% timely notification	Monthly

Performance Indicator 01 - Mandatory

Field	Indicator
Full Title	Percentage 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. (e.g.: 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 and Exclusion Criteria	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 (declared disaster activation).
Indicator Type	Rate Indicator – Clinical Governance Compliance
Formula	$(\text{Number of mortality/morbidity cases discussed in M\&M meetings in six-monthly} \div \text{Total number of mortality/morbidity cases in the same six-month}) \times 100$
Numerator	Number of mortality/morbidity cases discussed and documented in M&M meetings within the reporting year
Denominator	Total number of mortality/morbidity cases recorded in the hospital within the same reporting year

Field	Indicator
Target	≥ 30%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review signed minutes, case summaries, attendance lists, and QI logs; verify HOD certification; assess whether learning points were disseminated to all staff within the department as part of the audit cycle.
Person In charge (PIC)	Head of Department/Quality Manager or any other related appointed person.

Performance Indicator 02

Field	Indicator
Full Title	Percentage of unplanned re-admission within 48 hours of discharge
Rationale	This indicator was selected because: 1. Unplanned re- admissions are often considered to be the result suboptimal care in the previous admission leading to re-admission 2. Patients receiving good quality clinical services should not be subjected to unplanned re-admissions within 48 hours of discharge. Reference: Technical Specifications for Clinical Services Quality Indicators (CliSQI) 2026
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 $\leq$ 48 hours of previous discharge). This does not include readmission requested by next-of-kin or another department. Same Condition: ICD-11 diagnosis code matches initial admission.
Inclusion and Exclusion Criteria	Inclusion Criteria: All readmissions <48 hours post-discharge for the same diagnosis. Exclusion Criteria: 1. Patients of < 12 years of age. 2. AOR (at own risk) discharged patients during the first admission. 3. Patients that were discharged from wards under different department
Indicator Type	Rate Based Process Indicator
Formula	Unplanned 48-Hour Readmission Rate (%) = (No. of patients unplanned readmissions within 48 hours $\div$ Total patient discharges in the same period) $\times$ 100
Numerator	Number of unplanned re-admissions to the same ward for the same condition within 48 hours of discharge.
Denominator	Total number of patient discharges in the same reporting period.
Target	<0.5%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check discharge and readmission logs; verify ICD-11 diagnosis match; validate timestamps; review inpatient notes and discharge summaries for premature discharges.
Person In charge (PIC)	Head of Department/Medical Officer/Ward Manager or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Case fatality rate for two diseases (facility to decide based on local disease prevalence)
Rationale	Case fatality rate reflects the effectiveness and quality of clinical care delivered for specific high-burden conditions. Monitoring disease-specific mortality enables early detection of care gaps, supports targeted clinical improvement, and aligns with patient safety and outcome accountability in non-specialist settings.
Definition of Terms	Case Fatality Rate (CFR): The proportion of patients diagnosed with a specific disease who die from that disease within a defined period, expressed as a percentage. Selected Priority Diseases: Two diseases identified by the facility based on local epidemiology (e.g., pneumonia, dengue, sepsis, myocardial infarction, stroke). At least one disease should be among the facility's top 10 causes of inpatient mortality to ensure clinical relevance. Confirmed Case: Diagnosis established based on clinical, laboratory, or radiological criteria per MOH Clinical Practice Guidelines (CPG) or other nationally recognised diagnostic criteria. Death Due to Selected Disease: Death where the selected disease is documented as the primary or underlying cause of death in the medical record, consistent with ICD-10 coding.
Inclusion and Exclusion Criteria	Inclusion: All patients diagnosed with the selected diseases and managed within the facility during the reporting period, regardless of admission duration. Exclusion: Patients referred out before definitive management was initiated at the reporting facility; patients with incomplete or unconfirmed diagnosis (not meeting CPG/national criteria); deaths unrelated to the primary disease condition (e.g., trauma in a pneumonia patient); brought-in-dead (BID) cases.
Indicator Type	Rate-Based Outcome Indicator
Formula	Case Fatality Rate = (Number of deaths due to selected disease ÷ Total number of confirmed cases of the disease) × 100. Calculated separately for each of the two selected diseases.
Numerator	Number of deaths among patients diagnosed with each selected disease during the reporting period.

Field	Indicator
Denominator	Total number of confirmed cases for each selected disease during the same reporting period.
Target	Facility-defined benchmark based on national data or historical baseline (e.g., $\leq$ national average or year-on-year reduction).
Data Collection Frequency	Monthly
Tracer Methodology	Review of patient medical records, mortality registers, and diagnosis coding logs. Cross-check cause of death with clinical documentation. Audit selected cases for appropriateness of management and timeliness of intervention.
PIC – Person In charge	Head of Clinical Services, Medical Officer In-Charge, or any other related appointed person.

Performance Indicator 04

Field	Indicator
Full Title	Notification of infectious diseases within the stipulated period of time
Rationale	This indicator was selected because: 1. Infectious Diseases are required to be notified by law to the relevant authority in Malaysia i.e. Ministry of Health within a stipulated period of time. This indicator is a measure of the outcome of care of patients with infectious diseases and control of the disease within the community. 2. The outcome can be expected to be good with early diagnosis and compliance to standard protocols. 3. This indicator measures the outcome of the management and prevention of transmission of infectious diseases within the community.
Definition of Terms	Notification of Infectious Diseases a. Reporting or notifying of infectious diseases is mandated by law in Malaysia under the Prevention and Control of Infectious Disease Act 1988. A Notification Regulation was subsequently gazette in 1993 whereby a total of 26 infectious diseases is required to be notified to the relevant Authority i.e. Ministry of Health Malaysia within a stipulated time. A further Enactment saw the Emergency Ordinance (Prevention and Control of Infectious Disease) Amendment 2021, Malaysia (National). b. An effective and efficient disease surveillance and notification system allows early detection of disease outbreaks that will prompt intervention for the reduction of mortality and morbidity that may result from the epidemic/pandemic of these infectious diseases. The notification of infectious diseases is mandated to be done within a stipulated period of time for specific diseases as per listing under the Prevention and Control of Infectious Disease Act e.g. Dengue (DF and DHF) within 24 hours. Notifiable Diseases: There are 26 infectious diseases as listed under the Prevention and Control of Infectious Disease Act which upon detection and confirmation by laboratory findings are required to be reported to the Public Health Authorities within the specified period of time.

Field	Indicator
Inclusion and Exclusion Criteria	Inclusion Criteria: All confirmed or clinically diagnosed notifiable infectious disease cases. Exclusion Criteria: Disaster periods where standard reporting workflows are suspended as per KKM directive.
Indicator Type	Rate-Based Process Indicator
Formula	$\text{Compliance Rate (\%)} = (\text{Number of infectious disease cases notified within stipulated period} \div \text{Total number of identified notifiable cases}) \times 100\%$
Numerator	Number of infectious disease cases reported within the stipulated 24-hour period.
Denominator	Total number of notifiable infectious disease cases identified in the reporting period.
Target	100% timely notification
Data Collection Frequency	Monthly
Tracer Methodology	Audit e-Notifikasi entries against clinical case lists; review timestamps; verify concordance between IPC logs and district reporting system.
Person In charge (PIC)	Infection Control Officer or any other related appointed person.

09A

**Service
Standard 09A:
Clinical
Services
(Medical
Related
Services)**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09A: Clinical Services (Medical Related Services)

Performance Indicator Summary

There must be tracking and trending to be done for at least the last three (3) years of specific performance indicators, with mandatory of PI No (1), and, or not limited to but at least two (2) from the following PI No (2) – (8):

PI No	Indicator	Target	Reporting Frequency
01	<u>Mandatory:</u> Percentage of mortality and morbidity audits/meetings being conducted in the department with documentation of cases discussed	$\geq 30\%$	Six-Monthly
02	Percentage of unplanned re-admission within 48 hours of discharge	$<0.5\%$	Monthly
03	Dengue Case Fatality Rate (CFR)	$<1\%$	Monthly
04	Percentage of patients who had blood culture taken prior to starting treatment with the carbapenem group of antibiotics	$\geq 90\%$	Monthly
05	Number of deaths occurring within 24 hours of admission	Facility-defined downward trend over time; mandatory investigation if >3 cases per month	Six-Monthly
06	Percentage of identification of causative pathogen in Community Acquired Pneumonia (CAP)	$\geq 60\%$	Six-Monthly

PI No	Indicator	Target	Reporting Frequency
07	Number of healthcare workers infected with tuberculosis or other infectious diseases likely related to hospital exposure	Zero (0) occupational transmission events per year.	Yearly
08	Additionally, subspecialty-specific performance indicators shall be added when applicable. Subspecialties such as Respiratory Medicine, Gastroenterology, Nephrology, and Rheumatology shall each monitor any other two (2) indicators to support their respective goals and objectives.		

Performance Indicator 01 - Mandatory

Field	Indicator
Full Title	Percentage 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. (e.g.: 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 and Exclusion Criteria	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 (declared disaster activation).
Indicator Type	Rate Indicator – Clinical Governance Compliance
Formula	$(\text{Number of mortality/morbidity cases discussed in M\&M meetings in six-monthly} \div \text{Total number of mortality/morbidity cases in the same six-month}) \times 100$
Numerator	Number of mortality/morbidity cases discussed and documented in M&M meetings within the reporting year
Denominator	Total number of mortality/morbidity cases recorded in the hospital within the same reporting year

Field	Indicator
Target	≥ 30%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review signed minutes, case summaries, attendance lists, and QI logs; verify HOD certification; assess whether learning points were disseminated to all staff within the department as part of the audit cycle.
Person In charge (PIC)	Head of Department/Quality Manager or any other related appointed person.

Performance Indicator 02

Field	Indicator
Full Title	Percentage of Unplanned Re-admission Within 48 Hours of Discharge
Rationale	This indicator was selected because: 1. Unplanned re- admissions are often considered to be the result suboptimal care in the previous admission leading to re-admission 2. Patients receiving good quality clinical services should not be subjected to unplanned re-admissions within 48 hours of discharge. Reference: Technical Specifications for Clinical Services Quality Indicators (CliSQI) 2026
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 $\leq$ 48 hours of previous discharge). This does not include readmission requested by next-of-kin or another department. Same Condition: ICD-11 diagnosis code matches initial admission.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All medical inpatient discharges from medical wards. 2. All subspecialty patients discharged from medical ward within the same general medicine department (Includes CCU, CRW, nephrology wards etc). Exclusion Criteria: 1. Patients of < 12 years of age. 2. AOR (at own risk) discharged patients during the first admission. 3. Patients that were discharged from wards under different department (e.g., Cardiology ward under Cardiology Department).
Indicator Type	Rate Based Outcome Indicator
Formula	$\left(\frac{\text{Number of medical patients with unplanned readmissions to medical department within } (\leq) 48 \text{ hours of discharge}}{\text{Total number of medical patients discharged during the same period of time the numerator data was collected}} \right) \times 100$
Numerator	Number of medical patients with unplanned readmissions to medical department within ($\leq$) 48 hours of discharge

Field	Indicator
Denominator	Total number of medical patients discharged during the same period of time the numerator data was collected
Target	<0.5%
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check discharge and readmission logs; verify ICD-11 diagnosis match; validate timestamps; review inpatient notes and discharge summaries for premature discharges.
Person In charge (PIC)	Head of Department/Medical Officer/Ward Manager or any other related appointed person.

Performance Indicator 03

Field	Indicator
Full Title	Dengue Case Fatality Rate (CFR)
Rationale	Dengue CFR reflects the quality and timeliness of clinical management. This indicator was selected because: 1. 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. 2. This indicator measures the clinical effectiveness of management of dengue fever (both haemorrhage and non-haemorrhage)
Definition of Terms	Dengue Case, Dengue Fever (DF), and Dengue Haemorrhagic Fever (DHF): Laboratory-confirmed via NS1 antigen, IgM serology, or PCR. Dengue Death: A death where dengue is identified as a direct or contributory cause. Case Fatality Rate (CFR): Proportion of deaths among confirmed dengue cases.
Inclusion and Exclusion Criteria	Inclusion Criteria: All <i>confirmed</i> dengue cases managed by the facility. Exclusion Criteria: Suspected or unconfirmed cases; deaths clearly unrelated to dengue.
Indicator Type	Outcome Indicator – Epidemiological Surveillance
Formula	Dengue CFR (%) = (Number of cases admitted with DF & DHF/DSS and died from DF & DHF/DSS ÷ Total number of (DF& DHF) cases admitted) × 100%
Numerator	Number of cases admitted with DF & DHF/DSS and died from DF & DHF/DSS
Denominator	Total number of (DF& DHF) cases admitted
Target	<1%
Data Collection Frequency	Monthly
Tracer Methodology	Match e-Notifikasi data with death registry, verify against clinical case notes; review lab confirmations; audit death causation attribution.

Field	Indicator
Person In charge (PIC)	Head of Medical Department/Infectious Disease Unit Lead/Surveillance Officer

Performance Indicator 04

Field	Indicator
Full Title	Percentage of patients who had blood culture taken prior to starting treatment with the carbapenem group of antibiotics
Rationale	This indicator was selected because: 1. The carbapenem group of antibiotics is currently being used widely, at times without any form of monitoring. 2. This indicator will address the awareness of the appropriateness of the carbapenem group of antibiotics among prescribers.
Definition of Terms	Blood Culture: Diagnostic laboratory test detecting bloodstream infection pathogens. Carbapenems: Broad-spectrum antibiotics (e.g., meropenem). Prior: Blood culture taken before the first dose of carbapenem is administered.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients initiated on carbapenem prescriptions. Exclusion Criteria: Patients prescribed with the antibiotics other than carbapenem group of antibiotics.
Indicator Type	Rate-based output indicator
Formula	$\left(\frac{\text{Number of patients prescribed with the carbapenem group of antibiotics and had blood culture taken prior to starting treatment}}{\text{Total number of patients started on carbapenem antibiotic therapy during the reporting period.}} \right) \times 100\%$
Numerator	Number of patients prescribed with the carbapenem group of antibiotics and had blood culture taken prior to starting treatment
Denominator	Total number of patients started on carbapenem antibiotic therapy during the reporting period.
Target	≥90%
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check clinical notes, medication charts, lab report timestamps, and electronic prescribing records to confirm culture-before-antibiotic sequencing.
Person In charge (PIC)	Infectious Disease Team Lead/AMS Pharmacist/Medical Officer or any other related appointed person.

Performance Indicator 05

Field	Indicator
Full Title	Number of deaths occurring within 24 hours of admission
Rationale	Early inpatient deaths (<24 hours) may reflect systemic failures in triage, acute response, or initial treatment processes. Monitoring this indicator supports risk alerting, mortality surveillance, and early detection of service delivery gaps.
Definition of Terms	At presentation: Time of arrival at emergency department. Within 24 hours of admission: Starting time is on arrival to emergency department.
Inclusion and Exclusion Criteria	Inclusion Criteria: All inpatient deaths occurring within 24 hours of admission. Exclusion Criteria: Patient surviving within 24 hours of admission.
Indicator Type	Outcome Indicator – Mortality Surveillance
Formula	24-Hour Admission Mortality Count = Number of inpatient deaths occurring within 24 hours of admission
Numerator	Number of inpatient deaths within 24 hours of admission.
Denominator	Not applicable – absolute count indicator.
Target	Facility-defined downward trend over time; mandatory investigation if >3 cases per month
Data Collection Frequency	Six-monthly
Tracer Methodology	Cross-check death certificates, admission timestamps, ED triage logs, and EMR data; verify exclusion categories; conduct sentinel case review for unexpected deaths.
Person In charge (PIC)	Emergency Department Head/Medical Officer or any other related appointed person.

Performance Indicator 06

Field	Indicator
Full Title	Percentage of identification of causative pathogen in Community Acquired Pneumonia (CAP)
Rationale	This indicator was selected because: 1. Community acquired pneumonia is a diagnosis widely made without much consideration of common local causative organism, and hence leading to possible inappropriate use of broad-spectrum antibiotics. 2. The identification of common local causative organism may guide future use of antibiotics and reduce resistance rate. 3. To pick up new unknown pathogen in the community.
Definition of Terms	Community Acquired Pneumonia (CAP): Community acquired pneumonia is defined as pneumonia that is acquired outside the hospital. In community acquired pneumonia (CAP) ones get infected in a community setting. It does not happen in a hospital, nursing home or other hospital setting and involves the lower respiratory tract infection mostly caused by bacteria.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients admitted with the diagnosis of community acquired pneumonia. Exclusion Criteria: All patients admitted with diagnosis other than community acquired pneumonia.
Indicator Type	Rate based output indicator
Formula	(Number of patients admitted with community acquired pneumonia and the causative organism is identified ÷ Total number of patients admitted with the diagnosis of community acquired pneumonia) × 100%
Numerator	Number of patients admitted with community acquired pneumonia and the causative organism is identified
Denominator	Total number of patients admitted with the diagnosis of community acquired pneumonia
Target	≥60%
Data Collection Frequency	Six-monthly
Tracer Methodology	Match CAP admission logs with laboratory diagnostic records; verify pathogen identification method (culture/PCR/antigen test); cross-check documentation in EMR or equivalent record.

Field	Indicator
Person In charge (PIC)	Head of Respiratory Service/Infectious Disease Physician/Microbiologist or any other related appointed person.

Performance Indicator 07

Field	Indicator
Full Title	Number of healthcare workers infected with tuberculosis or other infectious diseases likely related to hospital exposure
Rationale	This indicator was selected because: 1. Reflect safety for healthcare workers. 2. To identify areas for improvements in terms of hospital infection control policy.
Definition of Terms	Healthcare Worker: A healthcare worker is one who delivers care and services to the sick and ailing either directly as doctors and nurses including emergency medical personnel, dental professionals and students, medical and nursing students or indirectly as aides, laboratory scientists and technicians, pharmacists, hospital volunteers and administrative staff. Healthcare workers also include the support services staff i.e. housekeeping staff, medical waste handlers and others. Hospital-Related Infection: The Healthcare industry is one of the most hazardous environments to work in. Employees in this industry are constantly exposed to a complex variety of health and safety hazards in the course of their work. Hazards range from biological exposure to disease causing organisms such as tuberculosis and human immunodeficiency virus (HIV). Hospital related Infection refers to the source of acquiring infections in a hospital setting.
Inclusion and Exclusion Criteria	Inclusion Criteria: All healthcare worker diagnosed with tuberculosis (or any other infectious diseases), the source of which is likely hospital-related Exclusion Criteria: Community-acquired infections or cases not epidemiologically linked to hospital exposure (including genomically unmatched strains).
Indicator Type	Output Indicator
Formula	Healthcare Associated HCW Infection Count = Number of HCWs with confirmed hospital-acquired infections
Numerator	Number of healthcare workers infected with TB or other infectious diseases confirmed as hospital-acquired.
Denominator	Not applicable – absolute count indicator.
Target	Zero (0) occupational transmission events per year.

Field	Indicator
Data Collection Frequency	Yearly
Tracer Methodology	Conduct exposure risk tracing (contact logs, rosters, ward assignment history); review genomic or laboratory linkage (if available); cross-check with Occupational Health documentation.
Person In charge (PIC)	Infection Control Team/Occupational Health Officer/Epidemiologist or any other related appointed person.

09B

**Service
Standard 9B
Clinical
Services
(Surgical
Related
Services)**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09B: Clinical Services (Surgical Related Services) Performance Indicator Summary

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

Subspecialties units in the Surgical Services shall monitor any other two (2) indicators to support its goals and objectives.

PI No	Indicator	Target	Reporting Frequency
General Surgical Services (Standard 9B)			
01	Percentage of mortality and morbidity audits/meetings being conducted in the department with documentation of cases discussed	≥ 30%	Six-monthly
02	Percentage of unplanned re-admission within 48 hours of discharge	≤ 2%	Monthly
03	Unplanned return to operating theatre within the same hospital admission following surgery	-	Monthly
Breast and Endocrine Surgery			
04	Recurrent laryngeal nerve injury in primary benign thyroid surgery	≤ 3%	Six-monthly
05	Percentage of patients with clear surgical margins in Breast Conserving Surgery (BCS)	≥ 85%	Six-monthly
Trauma Surgery			
06	Turnaround time from booking OT for crash laparotomy to surgery within less than sixty (60) minutes	≥ 95%	Six-monthly
07	Percentage of trauma laparotomy cases performed without complication	≥ 95%	Six-monthly
Cardiothoracic Surgery			
08	Elective isolated Coronary Artery Bypass Grafting (CABG) surgery mortality rate	≤ 3% (HV) / ≤ 7% (LV)	Six-monthly

09	Incidence rate of pneumothorax following removal of chest drains	$\leq 5\%$	Six-monthly
Colorectal Surgery			
10	Percentage of patients with unclear surgical margins in Rectal Cancer surgery	$\leq 10\%$	Six-monthly
11	Post-operative mortality rate for all major elective colorectal surgery	$\leq 10\%$	Six-monthly
Hepatobiliary Surgery			
12	Duodenal perforation rate post ERCP (endoscopic retrograde cholangiopancreatography)	$\leq 10\%$	Six-monthly
13	Percentage of patients with surgical site infection following elective liver surgery	$\leq 20\%$	Six-monthly
14	Post operative mortality rate for all major elective hepatobiliary surgery	$\leq 12\%$	Six-monthly
Neurosurgery			
15	Mild Traumatic Brain Injury (TBI) Case Fatality Rate	$\leq 2\%$	Six-monthly
16	Percentage of patients with surgical site infection following clean elective craniotomy	$\leq 3\%$	Six-monthly
17	Moderate Traumatic Brain Injury (TBI) Case Fatality Rate	$\leq 12\%$	Six-monthly
Plastic and Reconstructive Surgery			
18	Percentage of Full Thickness Skin Graft (FTSG) with $\geq 80\%$ graft take following elective surgery	$\geq 90\%$	Six-monthly
19	Percentage of post-palatoplasty haemorrhage patients reintubated and/or returned to operating theatre within ($\leq$) twenty-four (24) hours of primary palate repair	$\leq 5\%$	Six-monthly
Upper Gastrointestinal Surgery			

20	Percentage of patients with clear surgical margin post resection of Gastric Tumour performed with curative intent	$\geq 90\%$	Six-monthly
21	Incidence rate of oesophageal anastomotic leak requiring surgical intervention	$\leq 10\%$	Six-monthly
22	Percentage of patients with Gastric Adenocarcinoma who underwent curative surgical resection (RO) where $\geq$ fifteen (15) lymph nodes are resected and pathologically examined	$\geq 90\%$	Six-monthly
Urology			
23	Percentage of ureters that were stone free following ureterorenoscopy (URS) lithotripsy	$\geq 90\%$	Six-monthly
24	Percentage of safe percutaneous nephrolithotripsy (PCNL)	$\geq 85\%$	Six-monthly
25	Percentage of safe transurethral resection of the prostate (TURP)	$\geq 90\%$	Six-monthly
Vascular Surgery			
26	Post-operative mortality rate for open repair of Abdominal Aortic Aneurysm (AAA)	$\leq 5\%$	Six-monthly
27	Percentage of access-related hand ischemia (ARHI) following native arterio-venous fistula (AVF) creation	$\leq 1\%$	Six-monthly
Ophthalmology			
28	Percentage of patients developed infectious endophthalmitis following cataract surgery	$\leq 0.2\%$	Six-monthly
29	Percentage of patients without pre-existing ocular co-morbidity obtained visual acuity of 6/12 or better within ($<$) three (3) months following cataract surgery	$\geq 90\%$	Six-monthly

Orthopaedic Surgery			
30	Percentage of patients with waiting time of less than ($\leq$) seventy-five (75) minutes to see doctor in Orthopaedic Outpatient Clinic after completion of pre-planned procedure	$\geq 90\%$	Monthly
31	Percentage of patients with surgical site infection following clean elective orthopaedic surgery	$\leq 1\%$	Six-monthly
32	Percentage of unacceptable internal fixations of fracture requiring revision	$\leq 1\%$	Six-monthly
33	Percentage of post primary total knee replacement patient with length of stay in hospital of $\leq$ five (5) working days	$\geq 80\%$	Monthly
34	Post-operative sepsis rate in Orthopaedic	$\leq 2\%$	Six-monthly
Otorhinolaryngology Surgery			
35	Percentage of patients with waiting time of $\leq$ ninety (90) minutes to see the doctor at Otorhinolaryngology (ORL) Outpatient Clinic	$\geq 90\%$	Monthly
36	Percentage of ears with hearing improvement three (3) months post myringoplasty	$\geq 70\%$	Monthly
37	Incidence rate of primary post-tonsillectomy haemorrhage	$\leq 3\%$	Monthly

Performance Indicator 01

Field	Indicator
Full Title	Percentage 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. (e.g.: 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 and Exclusion Criteria	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 (declared disaster activation).
Indicator Type	Rate Indicator – Clinical Governance Compliance
Formula	$(\text{Number of mortality/morbidity cases discussed in M\&M meetings in six-monthly} \div \text{Total number of mortality/morbidity cases in the same six-month}) \times 100$
Numerator	Number of mortality/morbidity cases discussed and documented in M&M meetings within the reporting year
Denominator	Total number of mortality/morbidity cases recorded in the hospital within the same reporting year

Field	Indicator
Target	≥ 30%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review signed minutes, case summaries, attendance lists, and QI logs; verify HOD certification; assess whether learning points were disseminated to all staff within the department as part of the audit cycle.
Person In charge (PIC)	Head of Department/Quality Manager or any other related appointed person.

Performance Indicator 02

Field	Indicator
Full Title	Percentage of unplanned re-admission within 48 hours of discharge
Rationale	This indicator was selected because: 1. Unplanned re- admissions are often considered to be the result suboptimal care in the previous admission leading to re-admission 2. Patients receiving good quality clinical services should not be subjected to unplanned re-admissions within 48 hours of discharge. Reference: Technical Specifications for Clinical Services Quality Indicators (CliSQI) 2026
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 $\leq$ 48 hours of previous discharge). This does not include readmission requested by next-of-kin or another department. Same Condition: ICD-11 diagnosis code matches initial admission.
Inclusion and Exclusion Criteria	Inclusion Criteria: All surgical inpatient discharges from surgical wards Exclusion Criteria: 1. Patients of < 12 years of age. 2. AOR (at own risk) discharged patients during the first admission. 3. Patients that were discharged from wards under different department
Indicator Type	Rate Based Outcome Indicator
Formula	$\frac{\text{(Number of surgical patients with unplanned readmissions to surgical department within } (\leq) \text{ 48 hours of discharge } \div \text{ Total number of surgical patients discharged during the same period of time the numerator data was collected)}}{\times 100}$
Numerator	Number of surgical patients with unplanned readmissions to surgical department within ($\leq$) 48 hours of discharge
Denominator	Total number of surgical patients discharged during the same period of time the numerator data was collected

Field	Indicator
Target	≤ 2%
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check discharge and readmission logs; verify ICD-11 diagnosis match; validate timestamps; review inpatient notes and discharge summaries for premature discharges.
Person In charge (PIC)	Head of Department/Medical Officer/Ward Manager or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	Rate of unplanned return to Operating Theatre within the same hospital admission following surgery
Rationale	This indicator was selected because: 1. 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. 2. 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 and Exclusion Criteria	Inclusion Criteria: All cases that had undergone surgery Inclusive of day of surgery admission Exclusion Criteria: Endoscopy cases and day care cases
Indicator Type	Rate Based Outcome Indicator
Formula	Numerator / Denominator × 100%
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
Denominator	Total number of cases undergone surgical procedure under GA in the month
Target	-
Data Collection Frequency	Monthly
Tracer Methodology	Review of operation theatre records, surgical admission logs, patient medical records, anaesthesia records, post-operative notes, incident reports, and unplanned return to operating theatre documentation to identify cases requiring repeat surgical intervention under general anaesthesia during the same hospital admission.
Person In charge (PIC)	Head of Department/Medical Officer/Ward Manager or any other related appointed person.

Performance Indicator 04 – Breast and Endocrine Surgery

Field	Indicator
Indicator title	Recurrent Laryngeal Nerve (RLN) Injury in Primary Benign Thyroid Surgery
Rationale	This indicator was selected because: 1. Benign thyroid surgery is a common procedure. 2. Injury to recurrent laryngeal nerve (RLN) can cause significant morbidity to patients and in some cases, it may result in life-threatening complications e.g., airway obstruction. 3. In good hands and trained surgeon, the RLN injury is very low.
Definition of Terms	Primary: First time thyroid operation Injury to RLN: (I) RLN cut off during surgery. (II) Post op hoarseness of voice confirmed RLN injury via indirect laryngoscopy (IDL) assessment (by ENT) before discharged. (III) Both temporary and permanent injuries included. RLN at risk of injury: In a total thyroidectomy, 2 RLN are at risk of injury. In a hemi-thyroidectomy, 1 RLN is at risk. Thyroid operation: It includes hemi-thyroidectomy, total thyroidectomy and subtotal thyroidectomy. Isthmectomy is NOT included.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients undergoing primary thyroid operations for benign thyroid diseases. Exclusion Criteria: 1. Re-do, secondary and completion procedures. 2. All malignant cases. Histologically confirmed malignancy that is diagnosed after the procedures should also be excluded from final calculations. 3. Isthmectomy.
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of RLN palsy/injury after thyroid operation
Denominator	Total number of RLN at risk for injury following thyroid operation for benign thyroid disease in similar period (In Total Thyroidectomy, 2 RLN are at risk)
Target	≤ 3%

Field	Indicator
Data Collection Frequency	Six- monthly
Tracer Methodology	Retrospective clinical record review: Select sample of patients who underwent primary benign thyroid surgery within the reporting period. Trace from OT record → post-op notes → IDL assessment documentation → discharge summary. Verify RLN status against ENT IDL report. Cross-check numerator count against OT logbook entries.
Person In charge (PIC)	Head of Breast & Endocrine Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 05 - Breast and Endocrine Surgery

Field	Indicator
Indicator title	Percentage of Patients with Clear Surgical Margins in Breast Conserving Surgery (BCS)
Rationale	This indicator was selected because: 1. Breast Cancer is the commonest cancer affecting female patients. 2. A number of Breast Cancer patients with early Breast Cancer will only require Breast Conserving Surgery (BCS) as the definitive procedure. 3. BCS is cosmetically more acceptable and less traumatic to Breast Cancer patients. However, some technical expertise with good pathology service back-up is required for this type of treatment to be successful. 4. Clear surgical margins are paramount in BCS treatment of Breast Cancers.
Definition of Terms	Clear surgical margins: Complete excision of the tumour with clear margins (no tumour on ink). HPE of tissue needs to be reviewed within 1 month by the operating team to confirm on clear surgical margins. Margin: Referred to Superior, Inferior, Medial and Lateral Margins. Anterior (Superficial) margin is excluded if the skin overlying tumour is removed together with tumour. Deep margin clearance is when there is no tumour at margin. Based on Clinical Practice Guidelines for Management of Breast Cancer Third Edition (Page 21). Breast Conserving Surgery (BCS): Any procedure that preserve a part of the breast tissue. This can be performed with other Oncoplastic/Reconstructive procedures.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All patients undergoing BCS as the definitive surgical procedure for Breast Cancer. 2. Post neo-adjuvant BCS. Exclusion Criteria: 1. Procedures performed as part of diagnostic work-up. 2. Suspicious lesion. 3. Ductal Carcinoma In-Situ (DCIS) or other in-situ cancers/tumours. 4. Breast Sarcomas and Malignant Phylloides.

Field	Indicator
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients with clear surgical margin following BCS for Breast Cancer
Denominator	Total number of patients underwent BCS as definitive treatment for Breast Cancer
Target	≥ 88%
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select sample of BCS cases within reporting period. Trace from OT record → HPE report (confirm margin status within 1 month) → surgeon review documentation → discharge summary. Verify margin clearance against HPE report for each case. Cross-check denominator against OT booking list for BCS cases.
Person In charge (PIC)	Head of Breast & Endocrine Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 06 – Trauma Surgery

Field	Indicator
Indicator title	Turnaround Time from Booking OT for Crash Laparotomy to Surgery within ($\leq$) 60 Minutes
Rationale	This indicator was selected because: 1. In a hypotensive trauma patient due to exsanguinating intra-abdominal bleeding, urgent surgical intervention for haemostasis is required. Crash laparotomy to arrest the bleeding is part of the resuscitative process for these patients. 2. This indicator needs to be monitored as a delay from making a call to OT and time of surgical intervention can affect patient's survival.
Definition of Terms	Crash laparotomy: An urgent laparotomy that needs to be carried out for surgical haemostasis in a hypotensive trauma patient due to exsanguinating intra-abdominal bleed. Haemodynamically unstable: Systolic Blood Pressure (SBP) ($<$) 90mmHg, Heart Rate (HR) ($>$) 120/min despite initial resuscitation.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All haemodynamically unstable trauma patients due to intra-abdominal bleed seen in Emergency Department indicated for emergency laparotomy. 2. All haemodynamically unstable trauma patients due to intra-abdominal bleed seen in ICU or ward indicated for emergency laparotomy after failed non-operative management. Exclusion Criteria: 1. All patients who require laparotomy for peritonitis and are hemodynamically stable. 2. All patients referred on table for trauma laparotomy.
Indicator Type	Rate-based process indicator
Formula	Numerator / Denominator $\times$ 100%
Numerator	Number of crash laparotomies started within ($\leq$) 60 minutes of making a call to OT
Denominator	Total number of crash laparotomies
Target	$\geq 90\%$

Field	Indicator
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all crash laparotomy cases within reporting period. Trace from ED triage notes → OT call time documentation → OT record (knife-to-skin time). Calculate time interval from OT call to surgery commencement. Verify against OT logbook and case notes timeline.
Person In charge (PIC)	Head of Trauma Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 07 – Trauma Surgery

Field	Indicator
Indicator title	Percentage of Trauma Laparotomy Cases Performed without Complication
Rationale	This indicator was selected because: Any complications arising from trauma laparotomy will lead to more morbidity and mortality to the patient. Reference: National and international policies of the 'Safe Surgery Safe Life'.
Definition of Terms	Trauma laparotomy: Any laparotomy done for intra-abdominal injury. A single patient may undergo multiple laparotomies. For example, Patient A had three laparotomies during his/her admission, and therefore this is counted as three separate laparotomies, not just one. Complications of laparotomy: 1. Iatrogenic bowel injury; 2. Iatrogenic solid organ injury; 3. Iatrogenic abdominal vascular injury; 4. Iatrogenic ureter or bladder injury; 5. Anastomotic leak post bowel anastomosis; 6. Miss obvious major injuries – solid organ or bowel injuries; 7. Bleeding post splenectomy.
Inclusion and Exclusion Criteria	Inclusion Criteria: All trauma laparotomies done within the facility. Exclusion Criteria: 1. All trauma laparotomies done by other facilities and transferred in for further management. 2. Non trauma related/medical complications (e.g., Myocardial Infarction, respiratory failure, Acute Kidney Injury).
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of trauma laparotomy cases performed without complication
Denominator	Total number of trauma laparotomy cases performed
Target	≥ 95%

Field	Indicator
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all trauma laparotomy cases within reporting period. Trace from OT record → post-op notes → complication documentation → discharge summary. Verify absence of listed complications for each case. Cross-check each laparotomy episode individually (multiple per patient counted separately).
Person In charge (PIC)	Head of Trauma Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 08 – Cardiothoracic Surgery

Field	Indicator
Indicator title	Elective Isolated Coronary Artery Bypass Grafting (CABG) Surgery Mortality Rate
Rationale	This indicator was selected because: 1. CABG is the most common open heart surgical procedure currently being performed. However, there are various co-morbid factors which influence the outcome of cardiac surgery – age, co morbid illness e.g., diabetes, renal impairment and impaired left ventricular function. Risk stratification is necessary to enable common standardisation. There are various predictive scoring methods e.g., Parsonnet, STS score and Euroscore, which allows for comparison with international standards. 2. It has also been shown that high volume centres consistently perform better than low volume centres. Thus, such data will be important for human resource management and financial allocation. Reference: Krisstin Thorsteinsson et al. (2016, 1 February). Age-dependant trends in postoperative mortality and preoperative comorbidity in isolated coronary artery bypass surgery: a nationwide study. European Journal of Cardio-Thoracic Surgery (Volume 49, Issue 2, pp391-397).
Definition of Terms	Emergency surgery: Surgery performed immediately following referral from the cath lab (e.g., coronary artery dissection). Urgent surgery: Patient with high-risk anatomy (e.g., tight left main stem disease) that require surgery within the same admission. Elective surgery: Surgery for patients with stable coronary artery disease or disease controlled on medication and is usually discharged and readmitted later for elective surgery. High volume centre: Centres which performs > 150 open heart procedures/year. Low volume centre: Centres which performs < 150 open heart procedures/year.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All elective admission for isolated coronary artery disease patients requiring CABG. 2. Left Ventricular (LV) function – Euro Score II (EF > 30%). 3. Chronic Kidney Disease (CKD) stages (eGFR ≥ 60ml/min).

Field	Indicator
	Exclusion Criteria: 1. Patients with previous cardiac surgery (e.g., redo surgery). 2. Patients requiring concomitant procedure (e.g., valve procedures). 3. All inter and intra hospital referral (inpatient) CABG surgeries. 4. Left Ventricular (LV) function - Euro Score II ($EF \leq 30\%$). 5. Chronic Kidney Disease (CKD) stages ($eGFR < 60\text{ml/min}$).
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator $\times 100\%$
Numerator	Number of deaths from elective isolated CABG
Denominator	Total number of elective isolated CABG done
Target	$\leq 3\%$ (High volume centres) / $\leq 7\%$ (Low volume centres)
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all elective isolated CABG cases within reporting period. Trace from surgical booking $\rightarrow$ pre-op assessment (verify EF, eGFR eligibility) $\rightarrow$ OT record $\rightarrow$ post-op ICU/ward notes $\rightarrow$ discharge/mortality record. Verify death within same admission. Stratify by centre volume (>150 or <150 open heart procedures/year). Cross-check against OT logbook and mortality register.
Person In charge (PIC)	Head of Cardiothoracic Surgery Department, or any other related appointed person

Performance Indicator 09 – Cardiothoracic Surgery

Field	Indicator
Indicator title	Incidence Rate of Pneumothorax Following Removal of Chest Drains
Rationale	This indicator was selected because: 1. Chest drains are routinely inserted following Cardiothoracic Surgery to remove any postoperative pleural fluids, blood or air leaks. Once its function is served and no further accumulation of fluid or air is expected, it is removed under a controlled situation. If performed correctly, the risk of developing pneumothorax is very small. 2. Studies indicate an incidence of < 10% and from that less than 10% may require reinsertion of chest drain. Reinsertion of chest drain may cause morbidity including increase risk of pleural space infection, anxiety and sometime may cause serious consequences if air leaks still present and not noticed. A recurrent pneumothorax of more than 15% or a symptomatic patient may necessitate reinsertion of chest drain. Reference: Ronald L Eisenberg (2011, July). Are chest radiographs routinely indicated after chest tube removal following cardiac surgery/ AJR: 197.
Definition of Terms	-
Inclusion and Exclusion Criteria	Inclusion Criteria: All post cardiac surgery patients. Exclusion Criteria: Patients who had undergone thoracic surgery.
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of incidences of pneumothorax following chest drain removal
Denominator	Total number of chest drains removed
Target	≤ 5%
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Retrospective clinical record review: Select all post-cardiac surgery chest drain removal events within reporting period. Trace from post-op notes → chest drain removal documentation → post-removal CXR report → complication notes. Verify pneumothorax occurrence against radiology report. Count by drain removal event, not by patient.
Person In charge (PIC)	Head of Cardiothoracic Surgery Department, or any other related appointed person

Performance Indicator 10 – Colorectal Surgery

Field	Indicator
Indicator title	Percentage of Patients with Unclear Surgical Margins in Rectal Cancer Surgery
Rationale	This indicator was selected because: 1. To ensure complete resection of Rectal Cancer. 2. Unclear surgical margins is a precursor to cancer recurrence.
Definition of Terms	Margins: Include proximal, distal and circumferential margins.
Inclusion and Exclusion Criteria	Inclusion Criteria: All Rectal Carcinoma; irrespective of location, type and staging of carcinoma. Exclusion Criteria: Other colon carcinomas.
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients with unclear surgical margins in Rectal Cancer surgery
Denominator	Total number of patients underwent Rectal Cancer surgery
Target	≤ 10%
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all rectal cancer surgery cases within reporting period. Trace from OT record → HPE report (verify proximal, distal, circumferential margin status) → surgeon review documentation. Verify margin clearance against HPE report. Cross-check denominator against OT list for rectal cancer cases.
Person In charge (PIC)	Head of Colorectal Surgery Unit / Head of Department of Surgery, or any other related appointed person.

Performance Indicator 11 – Colorectal Surgery

Field	Indicator
Indicator title	Post-operative Mortality Rate for All Major Elective Colorectal Surgery
Rationale	This indicator was selected because: Monitoring of post-operative mortality rate is important to ensure quality of care provided by colorectal team of MOH is in par with other countries.
Definition of Terms	Post-operative mortality: Mortality following colorectal surgeries within the same admission or within ($\leq$) 30 days after surgery. Patients need to be seen in clinic around one month post-operative or followed up on the outcome via phone call with patient/family member (if patient defaulted appointment). Colorectal surgeries: Surgeries that are done for colorectal diseases such as Colorectal Carcinoma, Diverticular Disease, Ulcerative Colitis and others.
Inclusion and Exclusion Criteria	Inclusion Criteria: All major elective colorectal surgeries. Exclusion Criteria: 1. Emergency colorectal surgeries. 2. Death after 30 days of operation. 3. Patients who defaulted post-operative appointments and family members were not contactable.
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator $\times$ 100%
Numerator	Number of surgical related deaths within ($\leq$) 30 days from major elective colorectal surgeries
Denominator	Total number of major elective colorectal surgeries performed
Target	$\leq$ 8%
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all major elective colorectal surgery cases within reporting period. Trace from OT record $\rightarrow$ post-op ward/ICU notes $\rightarrow$ discharge/mortality record $\rightarrow$ TCA clinic notes

Field	Indicator
	(or phone call documentation for defaulters). Verify death within 30 days or same admission. Cross-check against mortality register and OT logbook.
Person In charge (PIC)	Head of Colorectal Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 12 – Hepatobiliary Surgery

Field	Indicator
Indicator Title	Duodenal Perforation Rate Post ERCP (Endoscopic Retrograde Cholangiopancreatography)
Rationale	Complication rate following ERCP indicates the safety of this procedure.
Definition of Terms	ERCP: Endoscopic Retrograde Cholangiopancreatography. It is a common procedure done to manage biliary and pancreatic pathology.
Inclusion and Exclusion Criteria	Inclusion criteria: 1. All emergency or elective ERCP performed inclusive of both under GA or sedation done by HPB surgeon or fellow. 2. All types of duodenal perforation. Exclusion criteria: Failed ERCP that have been attempted by clinicians from other hospitals and referred to HPB unit for reattempt ERCP.
Indicator Type	Rate-based process indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of duodenal perforations following ERCP diagnosed by imaging or intraoperative finding
Denominator	Total number of ERCPs performed
Target	$\leq 10\%$
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Scope Room and ward that cater for the above condition. Data is suggested to be collected from patient's case notes and procedure book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.

Field	Indicator
Person In charge (PIC)	Head of Hepatobiliary Surgery Department / Head of Quality Unit / Hospital Director / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 13 – Hepatobiliary Surgery

Field	Indicator
Indicator Title	Percentage of Patients with Surgical Site Infection Following Elective Liver Surgery
Rationale	1. Surgical site infections are a common cause of healthcare-associated infection. The incidence of SSI in elective cases was reported to be up to 15% in developing countries. 2. The most important factors for prevention of surgical site infection are timely administration of effective preoperative antibiotics and careful attention to other preoperative control measures. Careful infection control is essential; interventions include hand hygiene and use of gloves and other barrier devices (masks, caps, gowns, drapes, and shoe covers) by all operating room personnel. 3. Application of antiseptics to the skin is warranted to reduce the burden of skin flora. Patients with evidence of active infection prior to elective surgical procedure should complete treatment for the infection prior to surgery. Reference: Surgical site infection in elective clean and clean-contaminated surgeries in developing countries. Daniel Curcio, Alejandro Cane, Francisco Fernández, Jorge Correa. International Journal of Infectious Diseases 80 (2019) 34–45
Definition of Terms	Surgical site infection (SSI): Defined as infection related to an operative procedure that occurs at or near the surgical incision within ($\leq$) 30 days of the procedure. SSI includes: 1. The skin and subcutaneous tissue of the incision (superficial incisional) and/or the deep. 2. Soft tissue (for example, fascia, muscle) of the incision (deep incisional). 3. Involving organ/space tissue deeper than the fascia. Reference: 1. 2025 NHSN Surgical Site Infection (SSI) Checklist 2. Surgical Site Infection. Prevention and Surveillance Guideline. Ministry of Health.
Inclusion and Exclusion Criteria	Inclusion Criteria: All elective liver surgeries. Exclusion Criteria: Transplant surgery

Field	Indicator
Indicator Type	Rate-based outcome indicator
Formula	Numerator ÷ Denominator × 100%
Numerator	Number of patients with surgical site infection following elective liver surgery
Denominator	Total number of patients who underwent elective liver surgery
Target	≤ 20%
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected from Hepatobiliary Surgery Unit/Department. Data is suggested to be collected from patient's case notes, OT list, and OT record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Hepatobiliary Surgery Department / Head of Quality Unit / Hospital Director / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 14 – Hepatobiliary Surgery

Field	Indicator
Indicator Title	Post-Operative Mortality Rate for All Major Elective Hepatobiliary Surgery
Rationale	1. Internationally, it is found that post-operative mortality rate of major Hepatobiliary surgery is quoted to be around 10%. 2. Monitoring of post-operative mortality rate is important to ensure quality of care provided by MOH is in par with other countries.
Definition of Terms	Post-operative mortality: Mortality following all major elective Hepatobiliary surgery within the same admission or within ($\leq$) 30 days after surgery. Patients need to be seen in clinic around one-month post-operative or followed up on the outcome via phone call with patient/family member (if patient defaulted appointment).
Inclusion and Exclusion Criteria	Inclusion Criteria: All elective hepato-pancreatico-biliary surgeries e.g. Whipples, Distal Pancreatectomy, Total Pancreatectomy, Liver Surgery, Roux-en-Y Hepaticojejunostomy, Common Bile Duct Exploration, Cholecystectomy. Exclusion Criteria: 1. All emergency Hepatobiliary surgery. 2. Transplant surgery
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of patients who died following major elective Hepatobiliary surgery
Denominator	Total number of major elective Hepatobiliary surgeries performed
Target	$\leq 12\%$
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Data to be collected from Hepatobiliary Surgery Unit/Department. Data suggested to be collected from patient's case notes, OT list, and OT record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Hepatobiliary Surgery Department / Head of Quality Unit / Hospital Director / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 15 – Neurosurgery

Field	Indicator
Indicator Title	Mild Traumatic Brain Injury (TBI) Case Fatality Rate
Rationale	1. Mild Traumatic Brain Injury (TBI) is common and while, typically benign, has a very low risk of death sequelae, < 1%. 2. Management for mild TBI is provided by many primary and secondary centres. 3. Important considerations in the management is to provide care in accordance with the national guidelines to avoid this preventable mortality.
Definition of Terms	Fatality: Death of patients with isolated mild TBI within the same hospitalisation. Mild TBI: Patient with a Glasgow Coma Scale (GCS) of 13 to 15; measured at approximately 30 minutes after the injury.
Inclusion Criteria	Inclusion Criteria: 1. Acute isolated brain injury caused by blunt external force. 2. Direct admission with GCS 13–15. 3. Patients of ≥ 18 years of age. Exclusion Criteria: 1. Acute brain injury caused by penetrating force or non-trauma such as stroke. 2. Polytrauma where two or more serious injuries in at least ($\geq$) two areas of the body. 3. Patients of < 18 years of age. 4. Death from causes other than mild TBI (e.g. Myocardial Infarction).
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of patients with mild TBI who dies within the same hospitalisation
Denominator	Total number of patients admitted for mild TBI
Target	$\leq 2\%$

Field	Indicator
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Neurosurgical wards/ICU/CCU/CRW/wards that cater for the above condition. Data suggested to be collected from patient's case notes, admission & discharge record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Neurosurgery Department /Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 16 - Neurosurgery

Field	Indicator
Indicator Title	Percentage of Patients with Surgical Site Infection Following Clean Elective Neurosurgical Surgery
Rationale	1. Surgical site infections are a common cause of health care-associated infection. The reported rate ranges from 0.5–7.2% for cranial surgery and about 3.1% for spine surgery. 2. The most important factors for prevention of surgical site infection are timely administration of effective preoperative antibiotics and careful attention to other preoperative control measures. Careful infection control is essential; interventions include hand hygiene and use of gloves and other barrier devices (masks, caps, gowns, drapes, and shoe covers) by all operating room personnel. 3. Application of antiseptics to the skin is warranted to reduce the burden of skin flora. Patients with evidence of active infection prior to elective surgical procedure should complete treatment for the infection prior to surgery, particularly in circumstances when placement of prosthetic material is anticipated. The professional commitments in implementing these control measures for prevention of surgical site infection cannot be over-emphasized.
Definition of Terms	Surgical Site Infection (SSI): Defined as infection related to an operative procedure that occurs at or near the surgical incision within ($\leq$) 30 days of the procedure. Clinical criteria for SSI include one or more of the following: 1. A purulent exudate draining from a surgical site. 2. A positive fluid culture obtained from a surgical site that was closed primarily. 3. A surgical site that is treated or reopened in the setting of at least one clinical sign of infection (pain, swelling, erythema, warmth).
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All elective cranial and spinal surgery. 2. Adult and paediatric patients. Exclusion Criteria: 1. Elective cranial and spinal surgery for infective conditions (e.g. abscess). 2. Re-surgery cases.

Field	Indicator
	3. Cancer therapy patients (chemotherapy and radiation therapy). 4. Patients with active infection at a remote site. 5. Surgery done for external CSF diversion procedures (e.g. EVD, lumbar drain). 6. Patients who defaulted TCA.
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of patients with wound infection following clean elective neurosurgical surgery
Denominator	Total number of patients who underwent clean elective neurosurgical surgery
Target	$\leq 3\%$
Data Collection Frequency	Six-monthly Note: Data collected using a 3-month retrospective cohort approach. For example, data reported in January 2026 will be for patients who had operations done in October 2025, allowing adequate time for follow-up during TCA to assess the outcome.
Tracer Methodology	Data to be collected in the Neurosurgery Outpatient Clinic. Data is suggested to be collected from patient's case notes, OT list, OT record book, and wound slip. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly. Data to be verified by Head of Department before submission.
Person In charge (PIC)	Head of Neurosurgery Department, Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 17 - Neurosurgery

Field	Indicator
Indicator Title	Moderate Traumatic Brain Injury (TBI) Case Fatality Rate
Rationale	1. Mild Traumatic Brain Injury (TBI) mortality rate of < 2% has been successfully achieved in our country for the past 5 years. 2. Moderate TBI is also common and has a varied mortality rate between 7–12% in Asian high middle-income countries due to differences in healthcare and resources availability. 3. Management for moderate TBI is provided by many primary and secondary centres. 4. An important consideration in the management is to provide care in accordance with the international guideline and the best available resources. 5. To obtain a source for local data with regards to mortality among moderate TBI patients. 6. To propose for a national guideline on moderate TBI based on best available resources.
Definition of Terms	Fatality: Death of patients with isolated moderate TBI within the same hospitalization and directly related to the brain injury. Moderate TBI: Patient with a Glasgow Coma Scale (GCS) of 9–12 post resuscitation after the trauma at the Emergency Department.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. Acute isolated brain injury caused by blunt external force. 2. Direct Emergency Department admission to a neurosurgical centre following the trauma (in-house referrals). 3. Patients of 18–60 of age. 4. Moderate TBI patients managed medically, surgically or both. Exclusion Criteria: 1. Acute brain injury caused by penetrating force. 2. Any concomitant extracranial injury including spinal injury. 3. Any referral from Emergency Department of another hospital (with or without CT imaging facilities) to a neurosurgical centre. 4. Death from probable non-traumatic causes (e.g. Myocardial Infarction, systemic illness, coagulopathy). 5. Probability of the intracranial pathology not being caused by the direct impact of the trauma (e.g. spontaneous non-traumatic haemorrhage leading to the trauma).
Indicator Type	Rate-based outcome indicator

Field	Indicator
Formula	Numerator ÷ Denominator × 100%
Numerator	Number of patients with moderate TBI who die within the same hospitalization managed medically, surgically or both
Denominator	Total number of patients admitted for moderate TBI managed medically, surgically or both
Target	≤ 12%
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Neurosurgical wards/ICU/CCU/CRW/wards that cater for the above condition. Data suggested to be collected from patient's case notes and admission/discharge record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Neurosurgery Department /Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 18 – Plastic and Reconstructive Surgery

Field	Indicator
Indicator Title	Percentage of Full Thickness Skin Graft (FTSG) with $\geq 80\%$ Graft Take Following Elective Surgery
Rationale	1. It is an essential component of the reconstructive surgeon. 2. Full Thickness Skin Graft (FTSG) is technically a tedious procedure. It requires a well vascularised wound bed to support the grafted skin. 3. A wrong assessment by the surgeon, poor technique and poor postoperative care will lead to failure of the graft take.
Definition of Terms	Graft take: Refers to a process where the grafted skin adheres to the wound bed, revascularisation and remodelling of the healed skin graft. This process takes place in phases (e.g. adherence and imbibition in the first 48 hours, revascularisation or neovascularisation around day 4, and remodelling 12 to 18 months). The crucial period of the process is the first 2 weeks that risks graft failure. Reasons for skin graft failure include hematoma, infection, seroma, shear, inappropriate wound bed and error in placement. FTSG can be done as inpatient or outpatient procedure depending on the requirement for types of anaesthesia, size of graft and other clinical requirement. Upon discharge, patients are required to attend outpatient review. The first inspection of the graft is usually done one week after the procedure. Tie over or compressive dressing is usually applied onto the graft to avoid hematoma or shearing and to allow the revascularisation process to take place. Subsequent outpatient visit will be given from 3 to 7 days interval. A documentation of the percentage of graft take will be documented during these visits. The operating surgeon has to document if the graft has completely healed and does not require any further dressing.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients undergoing FTSG following elective surgery. Exclusion Criteria: 1. Patients with known skin disease. 2. Patients who defaulted appointment.
Indicator Type	Rate-based outcome indicator

Field	Indicator
Formula	Numerator ÷ Denominator × 100%
Numerator	Number of FTSG with ≥ 80% graft take following elective surgery
Denominator	Total number of FTSG performed by elective surgery
Target	≥ 90%
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Plastic Surgery Outpatient Clinic, Plastic SOPD, ward, or OT. Data is suggested to be collected from patient's case notes, OT list, OT record book, and FTSG record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Plastic and Reconstructive Surgery Department / Head of Quality Unit / Hospital Director / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 19 – Plastic and Reconstructive Surgery

Field	Indicator
Indicator Title	Percentage of Post-Palatoplasty Haemorrhage Patients Reintubated and/or Returned to Operating Theatre within ($\leq$) 24 Hours of Primary Palate Repair
Rationale	1. Primary haemorrhage is a known complication of palate repair and it is a surgical emergency. 2. Post-palatoplasty haemorrhage is a reflection of competency of the surgeon.
Definition of Terms	NA
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients undergoing primary cleft palate repair. Exclusion Criteria: 1. Patients of > 12 years of age. 2. Patients with blood dyscrasia.
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of post-palatoplasty haemorrhage patients reintubated and/or returned to operating theatre within ($\leq$) 24 hours of primary palate repair
Denominator	Total number of patients who underwent primary palate repair
Target	$\leq 5\%$
Data Collection Frequency	Six-monthly.
Tracer Methodology	Data to be collected in the Plastic and Reconstructive Surgery Ward or wards that cater for the above condition. Data is suggested to be collected from patient's case notes, OT list, and OT record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.

Field	Indicator
Person In charge (PIC)	Head of Plastic and Reconstructive Surgery Department / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 20 – Upper Gastrointestinal Surgery

Field	Indicator
Indicator title	Percentage of Patients with Clear Surgical Margin Post Resection of Gastric Tumour Performed with Curative Intent
Rationale	This indicator was selected because: 1. Tumour involvement of surgical resection margins is a negative prognostic factor. 2. Curative cancer surgery (RO) should aim to ensure complete excision of the tumour, as this affects the prognosis and long-term patient outcome.
Definition of Terms	Clear surgical margins: Complete excision of the tumour with clear margins. Margins include proximal and distal margins. HPE of tissue needs to be reviewed within 1 month by the operating team to confirm on clear surgical margins.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All Gastric Tumour surgery performed with curative intent. 2. Inclusive of cases post neo-adjuvant therapy. Exclusion Criteria: All palliative Gastric Tumour surgery.
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients with clear surgical margin post resection of Gastric Tumour performed with curative intent
Denominator	Total number of patients who underwent resection of Gastric Tumour with curative intent
Target	≥ 90%
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all curative-intent gastric tumour resection cases within reporting period. Trace from OT record → HPE report (verify proximal and distal margin status within 1 month) → surgeon review documentation. Cross-check denominator against OT booking list for gastric tumour cases.

Field	Indicator
Person In charge (PIC)	Head of Upper GI Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 21 – Upper Gastrointestinal Surgery

Field	Indicator
Indicator title	Incidence Rate of Oesophageal Anastomotic Leak Requiring Surgical Intervention
Rationale	This indicator was selected because: 1. Preoperative preparation for any major oesophageal surgery is important for a positive clinical outcome. 2. Improvement in preoperative general condition, stabilization of co-morbidities and proper patient selection are pertinent to improved clinical outcome.
Definition of Terms	Oesophageal anastomosis leak: It is a leak that requires surgical intervention/reoperation within 30 days.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients who undergo elective oesophago-gastric surgery for benign or malignant disease either conventional or thoracoscopic assisted surgery (inclusive of 2 or 3 stage oesophagectomy and any bowel interposition to the remnant to the oesophagus). Exclusion Criteria: Emergency oesophago-gastric surgery.
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients with oesophageal anastomotic leak requiring surgical intervention after undergoing elective oesophago-gastric surgery
Denominator	Total number of patients underwent elective oesophago-gastric surgery
Target	≤ 10%
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all elective oesophago-gastric surgery cases within reporting period. Trace from OT record → post-op ward/ICU notes → imaging (contrast study/CT) → reoperation OT record (if leak occurred). Verify leak diagnosis and surgical intervention within 30 days. Cross-check against OT logbook.

Field	Indicator
Person In charge (PIC)	Head of Upper GI Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 22 – Upper Gastrointestinal Surgery

Field	Indicator
Indicator title	Percentage of Patients with Gastric Adenocarcinoma Who Underwent Curative Surgical Resection (RO) Where ≥ 15 Lymph Nodes Are Resected and Pathologically Examined
Rationale	This indicator was selected because: Maximizing the number of lymph nodes resected and analysed enables reliable staging, which influences treatment decision making.
Definition of Terms	Curative surgical resection (RO): Curative gastrectomy should be done with intention of harvesting both tier one and tier two lymph nodes for adequate clearance and appropriate histological staging of degree of lymph node metastases.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients who undergo gastric surgery with curative intent (RO) for Gastric Adenocarcinoma. Exclusion Criteria: 1. Palliative gastrectomy. 2. Neo-adjuvant chemo/radiotherapy provided (will affect yield).
Indicator Type	Rate-based output indicator
Formula	Numerator / Denominator $\times 100\%$
Numerator	Number of patients with Gastric Adenocarcinoma who undergo curative surgical resection (RO) where ≥ 15 lymph nodes are resected and pathologically examined
Denominator	Total number of patients with Gastric Adenocarcinoma who underwent curative surgical resection (RO)
Target	$\geq 90\%$
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all curative-intent gastric adenocarcinoma resection cases within reporting period. Trace from OT record $\rightarrow$ HPE report (verify lymph node count ≥ 15) $\rightarrow$ pathology documentation of tier 1 and tier 2 nodes. Verify neo-adjuvant exclusion against oncology notes. Cross-check against OT logbook.

Field	Indicator
Person In charge (PIC)	Head of Upper GI Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 23 - Urology

Field	Indicator
Indicator Title	Percentage of Ureters that were Stone Free Following Ureterorenoscopy (URS) Lithotripsy
Rationale	1. Endo-urological or minimally invasive urological procedures form the bulk of present-day urological practice. 2. Ureterorenoscopy (URS) with ureteric stone lithotripsy is the commonest endourological procedure performed. 3. As Urolithiasis forms 60–70% of urological practice in Malaysia, the stone clearance rate after the performance of this procedure is an accurate reflection of clinical effectiveness of Urology care.
Definition of Terms	Ureteric stone: Any stone in the proximal, middle or distal ureter. Lithotripsy: Fragmentation of stone using intracorporeal device of either Holmium Laser or Swiss Lithoclast. Note: The number used in this indicator is based on number of ureters underwent URS lithotripsy done and not the number of patients. Stone free: Complete absence of any visible stone fragments along the ureter or in the ipsilateral kidney (retropulsed stone fragments) as seen in the immediate post-op KUB X-ray.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All radiopaque ureteric stone regardless of stone size and location. Radiopaque means the stone can be seen on plain KUB X-ray (90% of all stones are radiopaque). 2. More than 1 stone in the ureter and bilateral ureteric stones are included if decision was made before the operation to treat them at the same setting. Exclusion Criteria: 1. All radiolucent stone (unable to visualize on a plain KUB X-ray). 2. Cancellation of procedure due to anaesthesia reasons, intraoperative instability due to underlying medical conditions or patients developing urosepsis.
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$

Field	Indicator
Numerator	Number of ureters that were stone free following URS lithotripsy for ureteric stone
Denominator	Total number of ureters underwent URS lithotripsy for ureteric stone
Target	≥ 90%
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Urology Ward/OT or wards that cater for the above condition. Data is suggested to be collected from patient's case notes, OT list, OT record book, and procedure book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Urology Department / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 24 - Urology

Field	Indicator
Indicator title	Percentage of Safe Percutaneous Nephrolithotripsy (PCNL)
Rationale	This indicator was selected because: 1. Endo-urological or minimally invasive urological procedures form the bulk of present-day urological practice. 2. Percutaneous nephrolithotripsy (PCNL) is the major urological procedure performed for the treatment of large or complex renal stones. 3. As Urolithiasis forms 60%-70% of urological practice in Malaysia, the safe performance of this procedure is an accurate reflection of the quality of care in Urology.
Definition of Terms	Safe percutaneous nephrolithotripsy (PCNL): Absence of either one or more of the following complications: 1. Septicaemia; 2. Bleeding requiring transfusion of more than 2 units of blood intraoperatively; 3. Injury to adjacent organ (e.g., lung, bowel); 4. Wound infection; 5. Unplanned admission to ICU.
Inclusion and Exclusion Criteria	Inclusion Criteria: All renal stones regardless of size and location. Full staghorn calculi are also included. Exclusion Criteria: NA
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of safe PCNL cases performed
Denominator	Total number of PCNL performed
Target	≥ 85%
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all PCNL cases within reporting period. Trace from OT record → intraoperative blood loss/transfusion record → post-op ward/ICU notes → wound

Field	Indicator
	assessment → discharge summary. Verify absence of listed complications for each case. Cross-check against OT logbook and PCNL record book.
Person In charge (PIC)	Head of Urology Department, or any other related appointed person

Performance Indicator 25 - Urology

Field	Indicator
Indicator title	Percentage of Safe Transurethral Resection of the Prostate (TURP)
Rationale	This indicator was selected because: 1. Transurethral resection of the prostate (TURP) is the gold standard surgical treatment for Benign Prostatic Hyperplasia (BPH). 2. BPH is predominantly treated by medication and surgery is reserved for severe symptomatic BPH, failure of medical management and in situations where there are complications of BPH such as urinary retention. 3. The safe manner in which TURP is performed is a reflection of the standard of Urological training. 4. It also indicates appropriate case selection and supervision.
Definition of Terms	Safe transurethral resection of the prostate (TURP): Absence of either one or more of the following complications: 1. Post op length of stay greater than 5 days; 2. Bleeding requiring blood transfusion; 3. Return to OT during the same admission; 4. Perforation of the bladder; 5. TUR syndrome; 6. Septicaemia; 7. Unplanned admission to ICU.
Inclusion and Exclusion Criteria	Inclusion Criteria: All TURP performed on ASA I and II patients. Exclusion Criteria: NA
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of safe TURP cases performed
Denominator	Total number of TURP performed
Target	≥ 90%
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Retrospective clinical record review: Select all TURP cases within reporting period. Trace from OT record → post-op ward notes (verify LOS, transfusion, return to OT, bladder perforation, TUR syndrome, septicaemia, ICU admission) → discharge summary. Verify ASA classification from pre-op anaesthesia assessment. Cross-check against OT logbook and TURP record book.
Person In charge (PIC)	Head of Urology Department, or any other related appointed person

Performance Indicator 26 – Vascular Surgery

Field	Indicator
Indicator title	Post-operative Mortality Rate for Open Repair of Abdominal Aortic Aneurysm (AAA)
Rationale	This indicator was selected because: 1. Ruptured AAA carries a high morbidity with mortality rates as high as 80-90% in cases of free rupture. 2. Exclusion of AAA via open repair on the elective schedule lowers the mortality between 5-10% in patients without significant co-morbid medical problems.
Definition of Terms	Abdominal Aortic Aneurysm (AAA): Dilatation of the abdominal aorta of more than 3 cm at its widest diameter. Elective open repair: Open AAA repair scheduled and performed on an elective operating list. Semi-emergency open repair: Open repair of AAA slotted in the next available list within same admission for symptomatic of impending leak of the AAA. Post-operative mortality: Mortality following an open repair of AAA within the same admission or within ($\leq$) 30 days after surgery.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients undergoing open repair for AAA as an elective or semi-emergency procedure. Exclusion Criteria: 1. Ruptured aneurysms. 2. Patients undergoing open repair for AAA as an emergency procedure. 3. Death after 30 days of operation.
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator $\times$ 100%
Numerator	Number of deaths following open repair of AAA
Denominator	Total number of patients underwent open repair of AAA
Target	$\leq$ 5%
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Retrospective clinical record review: Select all open AAA repair cases (elective and semi-emergency) within reporting period. Trace from OT record → post-op ICU/ward notes → discharge/mortality record → TCA clinic notes (or phone call documentation). Verify death within 30 days or same admission. Cross-check against mortality register and OT logbook.
Person In charge (PIC)	Head of Vascular Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 27 – Vascular Surgery

Field	Indicator
Indicator title	Percentage of Access-Related Hand Ischemia (ARHI) Following Native Arterio-Venous Fistula (AVF) Creation
Rationale	This indicator was selected because: 1. A huge number of AVF's are performed due to the increasing incidence of Diabetes Mellitus, which is the most common cause of renal failure. 2. Dialysis-access induced limb ischemia is a known complication from AVF creation and this can lead to tissue loss or even limb loss. With careful selection of patients, this can be avoided. 3. Internationally, incidence of Ischaemic Steal Syndrome (ISS) is found to be ranging between 0.5 to 5%. Monitoring of this indicator is important to ensure quality of care provided by MOH is in par with other countries. Reference: Strategies for Predicting and Treating Access Induced Ischemic Steal Syndrome; Eur J Vasc Endovasc Surg 32, 309e315 (2006). Steal in Hemodialysis Patients Depends on Type of Vascular Access; Eur J Vasc Endovasc Surg 32, 710e717 (2006).
Definition of Terms	Native AVF: Arterio-Venous Fistula configuration from one of the following: 1. Radio-cephalic AVF; 2. Brachio-cephalic AVF; 3. Brachio-basilic AVF. Access-related hand ischemia (ARHI): Reduced perfusion to the ipsi-lateral upper limb within 30 days following AVF creation with significant signs and symptoms of Ischemia (grade 3). Patients need to be seen in clinic around one-month post-operative to follow up on the post-operative outcome.
Inclusion and Exclusion Criteria	Inclusion Criteria: All native AVF performed for haemodialysis vascular access. Exclusion Criteria: 1. Vascular access procedures performed using prosthetic grafts and catheters. 2. Vascular access procedures involving the lower limbs.
Indicator Type	Rate-based outcome indicator

Field	Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of ARHI within ($\leq$) 30 days following native AVF creation
Denominator	Total number of native AVF created
Target	$\leq 1\%$
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all native AVF creation cases within reporting period. Trace from OT record → post-op ward notes → TCA clinic notes (30-day follow-up) → vascular assessment documentation. Verify ARHI (grade 3 ischemia) against clinical assessment. Cross-check against OT logbook and AVF record book.
Person In charge (PIC)	Head of Vascular Surgery Unit / Head of Department of Surgery, or any other related appointed person

Performance Indicator 28 - Ophthalmology

Field	Indicator
Indicator Title	Percentage of patients developed infectious endophthalmitis following cataract surgery
Rationale	This indicator was selected because: 1. Infectious Endophthalmitis is a rare but devastating complication after cataract surgery which may lead to permanent blindness. Morbidity associated with post-operative Infectious Endophthalmitis can be substantial and is related not only to acute process but also to late sequelae. 2. The causes can be multifactorial from patient to surgical environmental factors (contamination of sterilized instruments, disposable supplies, theatre environment, etc. 3. Monitoring of this KPI is mandatory to ensure safety of the service.
Definition of Terms	Infectious Endophthalmitis: Infection involving both the anterior and posterior segments of the eye after cataract surgery. A patient post cataract can develop Infectious Endophthalmitis any time after the cataract surgery.
Inclusion and Exclusion Criteria	Inclusion Criteria: All elective cataract surgeries Exclusion Criteria: All emergency and semi-emergency cataract surgeries.
Indicator Type	Rate Based Outcome Indicator
Formula	$(\text{Number of patients developed Infectious Endophthalmitis following cataract surgery during the specified period} \div \text{Total number of patients underwent cataract surgery during the specified period}) \times 100\%$
Numerator	Number of patients developed Infectious Endophthalmitis following cataract surgery during the specified period
Denominator	Total number of patients underwent cataract surgery during the specified period
Target	< 0.2 % (2 cases per 1000 operations)
Data Collection Frequency	Six-monthly
Tracer Methodology	Trace all cataract surgery cases from operating theatre records and surgical logs within the specified period. Review postoperative follow-up records, clinic notes, and admission records to identify cases diagnosed with Infectious Endophthalmitis. Verify diagnosis based on

Field	Indicator
	documented clinical findings involving anterior and posterior segments of the eye. Cross-check with infection control reports and incident reporting systems. Exclude cases classified under emergency and semi-emergency cataract surgeries. Validate totals against surgical registry and patient records.
PIC (Person In charge)	Ophthalmologist, Medical Officer, Staff Nurse, Infection Control Nurse, OT Nurse, Clinic Coordinator or any other related appointed person.

Performance Indicator 29 - Ophthalmology

Field	Indicator
Indicator Title	Percentage of patients without pre-existing ocular co- obtained visual acuity of 6/12 or better within ($\leq$) 3 months following cataract surgery
Rationale	This indicator was selected because: 1. Cataract is a preventable blindness. 2. Cataract surgery is indicated to improve the quality of life. Therefore, by measuring this indicator, we can monitor the quality of service given.
Definition of Terms	Pre-existing ocular comorbidities: 1. Diabetic Maculopathy. 2. Advanced Diabetic Eye Disease. 3. Macula Scar from any cause. 4. Amblyopia. 5. Optic neuropathy from any cause. 6. Cornea opacities from any cause.
Inclusion and Exclusion Criteria	Inclusion Criteria: All elective cataract surgeries Exclusion Criteria: 1. Patients with pre-existing ocular co-morbidity that will affect visual outcome. 2. All emergency and semi-emergency cataract surgeries.
Indicator Type	Rate Based Outcome Indicator
Formula	$\left(\frac{\text{Number of patients without pre-existing ocular co-morbidity obtained visual acuity 6/12 or better within } (\leq) 3 \text{ months following cataract surgery}}{\text{Total number of patients without pre-existing ocular co-morbidity underwent cataract surgery}} \right) \times 100\%$
Numerator	Number of patients without pre-existing ocular co-morbidity obtained visual acuity 6/12 or better within ($\leq$) 3 months following cataract surgery
Denominator	Total number of patients without pre-existing ocular co-morbidity underwent cataract surgery
Target	$\geq 90\%$
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Trace all elective cataract surgery cases from operating theatre records within the specified period. Screen patient records to exclude those with documented pre-existing ocular co-morbidities. Review follow-up clinic records within ($\leq$) 3 months post-surgery to identify documented visual acuity outcomes. Verify visual acuity of 6/12 or better from clinical notes or ophthalmology assessment records. Cross-check with clinic registers and electronic medical records. Exclude emergency and semi-emergency cases as specified. Validate totals against surgical logs and patient databases.
PIC (Person In charge)	Ophthalmologist, Medical Officer, Optometrist, Staff Nurse, Clinic Coordinator, Data Collector or any other related appointed person

Performance Indicator 30 – Orthopaedic Surgery

Field	Indicator
Indicator title	Percentage of Patients with Waiting Time of Less Than ($\leq$) 75 Minutes to See Doctor in Orthopaedic Outpatient Clinic after Completion of Pre-Planned Procedure
Rationale	This indicator was selected because: 1. Patient-centred services must be given priority to prompt attention to patient's needs by reducing waiting times for consultation. 2. It is the aim of the MOH to reduce the waiting times to a minimum in line with the Circular of the Director-General of Health Malaysia No. 6/2004 – Steps to Reduce Waiting Time in MOH Facilities. 3. For hospitals to eliminate or reduce waiting time, it is important to balance between the demand for appointments and the supply of appointments.
Definition of Terms	Waiting time: Time of registration counter at department counter / time of appointment given to patient / time of completion of required pre-planned procedure (whichever is later) till the time the patient is first seen by the doctor, which is beginning of a consultation. Pre-planned procedure: Imaging procedure; Cast removal; Blood investigation; Other relevant procedures.
Inclusion and Exclusion Criteria	Inclusion Criteria: All outpatients of Orthopaedic Outpatient Clinic. Exclusion Criteria: Patients who come without an appointment ("walk-in" patients). Sampling: Using an average of total patients seen in a month, 30% of the patients in each month need to be sampled
Indicator Type	Rate-based process indicator
Formula	Numerator / Denominator $\times$ 100%
Numerator	Number of sampled patients with waiting time of $\leq$ 75 minutes to see the doctor at the Orthopaedic Outpatient Clinic after completion of pre-planned procedure
Denominator	Total sample of patients seen by the doctor at the Orthopaedic Outpatient Clinic
Target	$\geq 90\%$

Field	Indicator
Data Collection Frequency	Six-monthly
Tracer Methodology	Concurrent sampling review: On selected clinic days (30% of monthly clinic days, randomised across all days of the week), trace from department registration counter timestamp / appointment time / pre-planned procedure completion time (whichever latest) → time first seen by doctor. Calculate waiting time interval per sampled patient. Verify against waiting time slips and appointment records.
Person In charge (PIC)	Head of Orthopaedic Department, or any other related appointed person

Performance Indicator 31 – Orthopaedic Surgery

Field	Indicator
Indicator Title	Percentage of Patients with Surgical Site Infection Following Clean Elective Orthopaedic Surgery
Rationale	1. Surgical site infection is multi-factorial. The surgeon has a role in its prevention. Attention to details that includes pre-operative preparation, intra-operative soft tissue handling and post-operative wound care. Surgical site infection would be a reflection of such care. 2. Infection of surgical wounds is a significant nosocomial infection problem in hospitals, which in turn is an important issue in patient safety. Timely investigation of higher-than-expected rates of infection may identify issues relating to preventative factors for corrective action.
Definition of Terms	Elective surgery: Planned, scheduled, and well-prepared patient. Clean surgery: Surgery in patients with no prior laceration wound at the surgical site or presence of wound/sore/infection in the body, or presence of acute severe soft tissue injury. Surgical site infection (SSI): Includes both the superficial and deep infection (Centres of Disease Control and Prevention guideline). The cut-off points to be considered SSI is 3 months post-surgery. Therefore, all the clean elective operative patients must be seen/reviewed at around 3 months post-op. Centres of Disease Control and Prevention (CDC) Definitions of SSI: 1. Superficial infection: Involves only the skin and subcutaneous tissue of the incision AND the patient has at least one of the following: a. Purulent drainage from the superficial incision. b. Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision. c. At least one of the following signs or symptoms of infection (pain or tenderness, localized swelling, redness or heat). d. Superficial incision is deliberately opened by surgeon, unless incision is culture-negative. e. Diagnosis of superficial incisional SSI by the surgeon or attending physician.

Field	Indicator
	2. Deep infection: Infection involved deep soft tissues (e.g. fascia and muscle layers) of the incision AND the patient has at least one of the following: - Purulent drainage from the deep incision but not from the organ/space component of the surgical site. - A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms (unless incision is culture-negative): - Fever ($> 38^{\circ}\text{C}$). - Localized pain or tenderness. - An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathological or radiological examination. - Diagnosis of deep incisional surgical site infection by a surgeon or attending physician. **Note: - Do not count stitch abscesses (minimal inflammation and discharge confined to the points of suture penetration), or a localized stab wound infection as a surgical site infection. - If the incisional site infection involves or extends into the fascia and muscle layers, report as a deep incisional SSI. - An infection that involves both the superficial and deep incision sites should be classified as a deep incisional surgical site infection.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients who underwent clean elective orthopaedic surgery. This includes: - Arthroplasty. - Arthroscopic surgery. - Spine surgery. - Deformity correction. - Non-union. - Delayed union. Exclusion Criteria: - All emergency and semi-emergency surgeries. - External fixation.
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$

Field	Indicator
Numerator	Number of patients with surgical site infection in clean elective orthopaedic surgery
Denominator	Total number of patients who underwent clean elective orthopaedic surgery
Target	≤ 1%
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Orthopaedic Outpatient Clinic/Orthopaedic wards or wards that cater for the above condition. Data is suggested to be collected from patient's case notes, OT list, OT record book, and wound slip. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Orthopaedic Department /Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 32 – Orthopaedic Surgery

Field	Indicator
Indicator title	Percentage of Unacceptable Definitive Fixations of Fracture Requiring Revision
Rationale	This indicator was selected because: 1. Suboptimal fracture fixations delay/prevent early recovery of patient. Increases morbidity and mortality, cost, and contribute to resource wastage. 2. Re-surgery also increases risk of nosocomial infection and length of hospital stay.
Definition of Terms	Fixation: Any form of device to hold the bone fragments internally or externally, includes any form of plate, nail, screw or wires. The number used in this indicator is based on number of fixations of fracture done and not the number of patients. Definitive fixation: Final surgical procedure used to achieve stable and long-term fixation of a fracture, allowing proper healing and restoration of function of the bone. Unacceptable: Fixations that are considered to result in poor fracture reduction; this decision is made by the senior surgeon or Head of Department. Revision: Corrective surgery to redo the fracture alignment or device configuration.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All long bone fractures (femur, tibia, fibula, humerus, radius and ulna). 2. All peri-articular fractures around shoulder, elbow, wrist, hip (neck of femur), knee and ankle. 3. All small bone fractures (including carpal, metacarpal, metatarsal and tarsal bone) in the hand or foot. 4. All definitive external fixations (including k-wires). Exclusion Criteria: 1. Pelvic and acetabulum fractures. 2. Scapula and glenoid fractures. 3. Spine injury.
Indicator Type	Rate-based outcome indicator
Formula	Numerator / Denominator × 100%

Field	Indicator
Numerator	Total number of unacceptable fixation or reduction
Denominator	Total number of definitive fixation cases
Target	$\leq 1\%$
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all definitive fracture fixation cases within reporting period. Trace from OT record → post-op imaging → senior surgeon/HOD review documentation → revision OT record (if applicable). Verify unacceptable fixation determination by senior surgeon/HOD. Count by fixation event, not by patient. Cross-check against OT logbook and fixation record list.
Person In charge (PIC)	Head of Orthopaedic Department, or any other related appointed person

Performance Indicator 33 – Orthopaedic Surgery

Field	Indicator
Indicator Title	Percentage of Post Primary Total Knee Replacement Patients with Length of Stay in Hospital of ≤ 5 Working Days
Rationale	1. Knee replacement surgery (arthroplasty) involves replacing a damaged, worn or diseased knee with an artificial joint. 2. It is a routine operation for knee pain most commonly caused by arthritis.
Definition of Terms	Primary total knee replacement: A surgical procedure to replace both sides of the knee joint with artificial material. Length of stay: Time taken from Day 1 post operation to the time when the patient is discharged home.
Inclusion and Exclusion Criteria	Inclusion Criteria: All non-complicated primary total knee replacement. Exclusion Criteria: 1. Bilateral total knee replacement. 2. Revision surgery. 3. Patients with length of stay more than 5 working days due to their co-morbidities not due to the knee replacement surgery.
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of post primary total knee replacement patients with length of stay in hospital of ≤ 5 working days
Denominator	Total number of patients who underwent primary total knee replacement
Target	$\geq 80\%$
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Orthopaedic wards or wards that cater for the above condition. Data is suggested to be collected from patient's case notes, OT notes, OT record book, and admission & discharge record book.

Field	Indicator
	Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Orthopaedic Department / Head of Quality Unit / Hospital Director / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 34 – Orthopaedic Surgery

Field	Indicator
Indicator title	Post-operative Sepsis Rate in Orthopaedic
Rationale	This indicator was selected because: Treating and caring for patient in a safe environment and protecting them from avoidable harm.
Definition of Terms	Sepsis (Sepsis-3 Guidelines): Defined as life-threatening organ dysfunction caused by a dysregulated host response to an infection. Malaysian Registry of Intensive Care criteria: 1. Sepsis refers to documented infection with 2 out of 4 SIRS criteria: Temperature > 38.3°C or < 36°; 2. Total white cell count > 12000 or < 4000; 3. Heart rate > 90/min; 4. Respiration rate > 20 breath/minute or PaCO₂ < 32 mmHg. Severe sepsis criteria: 1. Hypotension (SBP < 90 mmHg or MAP < 70 mmHg); 2. PaO₂/FiO₂ ≤ 300 mmHg; 3. Acute decrease in platelet count to < 100,000 u/L; 4. Acute increase in total bilirubin to > 70umol/L; 5. Acute increase serum creatinine to > 170umol/L or urine output < 0.5 mL/kg/hour > 2 hours; 6. Serum lactate > 4 mmol/l. Post-operative period: Within one-month post-surgery. Clean Elective Surgery: Pre-plan or schedule surgery for orthopaedic cases which do not have any initial or previous wound or sign of infection.
Inclusion and Exclusion Criteria	Inclusion Criteria: Any (schedule or pre plan) clean elective surgery/operation done under Orthopaedic Department. Exclusion Criteria: 1. Pre-existing sepsis and pre-existing infection. 2. Pre-existing immune compromised state (e.g., Uncontrolled DM, Retroviral positive, Malignancy). 3. Pre-existing organ dysfunction (e.g., Liver failure, ESRF, Peripheral vascular disease). 4. Patient 18 years old and below. 5. Poly-trauma patient. 6. Revision fixation surgery. 7. External fixation or K-Wire.
Indicator Type	Rate-based outcome indicator

Field	Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients with post-operative sepsis after operation
Denominator	Total number of clean elective surgery
Target	≤ 2%
Data Collection Frequency	Six-monthly
Tracer Methodology	Retrospective clinical record review: Select all clean elective orthopaedic surgery cases within reporting period. Trace from OT record → post-op ward notes (within 1 month) → sepsis screening documentation (SIRS criteria) → ICU transfer notes (if applicable) → discharge summary. Verify sepsis diagnosis against Sepsis-3 / MRIC criteria. Verify exclusion criteria against pre-op assessment. Cross-check against OT logbook and admission records.
Person In charge (PIC)	Head of Orthopaedic Department, or any other related appointed person

Performance Indicator 35 – Otorhinolaryngology Surgery

Field	Indicator
Indicator Title	Percentage of patients with waiting time of ≤ 90 minutes to see the doctor at the Otorhinolaryngology (ORL) Outpatient Clinic
Rationale	This indicator was selected because: 1. MOH aims for waiting time to see the doctor at outpatient services, to be less than 90 minutes, in line with patient-centred services. Waiting time is time patient first registers in the hospital till the time patient is seen by doctor. 2. The waiting time is based on patient's experience from the time the patient first registers at the first counter in the hospital until seen by doctor. In view of many counters being involved in some hospitals, some clinical departments have opted for monitoring of registration from department counter, as any process prior to that appears out of the clinical department's control. 3. For hospitals to eliminate or reduce waiting time, it is important to balance between the demand for appointments and the supply of appointments. One needs to identify opportunities for improvement by strengthening the policy of outpatient services in hospital.
Definition of Terms	Waiting time: Time of registration at department counter or time of appointment given to patient (whichever is later) till the time the patient is first seen by the doctor, which is beginning of a consultation.
Inclusion and Exclusion Criteria	Inclusion Criteria: All outpatients of the Otorhinolaryngology Outpatient Clinic. Exclusion Criteria: 1. Patients who come without an appointment ("walk-in" patients). 2. Patients that need to do procedures on the same day before seeing the doctors (e.g. blood taking or imaging).
Indicator Type	Rate Based Process Indicator
Formula	$\left(\frac{\text{Number of sampled patients with waiting time of } \leq 90 \text{ minutes to see the doctor at Otorhinolaryngology Outpatient Clinic}}{\text{Total sample of patients seen by the doctor at the Otorhinolaryngology Outpatient Clinic}} \right) \times 100\%$
Numerator	Number of sampled patients with waiting time of ≤ 90 minutes to see the doctor at Otorhinolaryngology Outpatient Clinic
Denominator	Total sample of patients seen by the doctor at the Otorhinolaryngology Outpatient Clinic

Field	Indicator
Target	≥ 90%
Data Collection Frequency	Monthly
Tracer Methodology	Trace patient flow from registration/appointment time to first consultation using clinic registration system, appointment logs, and patient records. Verify sampling methodology (30% monthly sample) ensuring randomisation across clinic days. Cross-check waiting time calculations against timestamps recorded at registration counter and consultation start time. Validate inclusion and exclusion criteria through clinic records and procedure logs. Ensure consistency with sampling documentation and monthly reporting.
PIC (Person In charge)	Clinic Nurse in-charge, ORL Clinic Coordinator, Medical Officer, Clinic Supervisor or any other related appointed person

Performance Indicator 36 – Otorhinolaryngology Surgery

Field	Indicator
Indicator Title	Percentage of ears with hearing improvement 3 months post myringoplasty
Rationale	This indicator was selected because: 1. Myringoplasty is not a complicated surgery, can be done by general ORL surgeons. It is a procedure that is performed in all ORL centres which allows comparison of services between different centres. 2. Outcome which is hearing improvement post-myringoplasty can be measured objectively by pure tone audiometry.
Definition of Terms	Improvement of hearing: It is the improvement 3 months post myringoplasty by a minimum of 5 dB at least one frequency by pure tone audiometry. Patient should be seen in ORL clinic within 3 to 6 months post myringoplasty to assess on hearing improvement. The number used in this indicator is based on number of ears with myringoplasty done and not the number of patients.
Inclusion and Exclusion Criteria	Inclusion Criteria: Patients of ≥ 18 years of age Exclusion Criteria: 1. Patients of < 18 years of age 2. Revision surgery 3. Total perforation 4. Combine procedure (e.g. combined with mastoidectomy)
Indicator Type	Rate Based Outcome Indicator
Formula	$(\text{Number of ears with hearing improvement 3 months post Myringoplasty} \div \text{Total number of ears with myringoplasty done}) \times 100\%$
Numerator	Number of ears with hearing improvement 3 months post Myringoplasty
Denominator	Total number of ears with myringoplasty done
Target	$\geq 70\%$
Data Collection Frequency	Monthly
Tracer Methodology	Trace surgical cases from ORL operation records and patient files to identify myringoplasty procedures. Verify follow-up audiometry results at 3–6 months post-surgery to confirm ≥ 5 dB improvement at least one frequency. Cross-check audiology reports with clinic follow-up records.

Field	Indicator
	Ensure inclusion and exclusion criteria are applied accurately. Validate ear-based counting (not patient-based) against operative logs and audiology database.
PIC (Person In charge)	ORL Surgeon, Audiologist, Clinic Nurse, ORL Clinic Coordinator or any other related appointed person

Performance Indicator 37 – Otorhinolaryngology Surgery

Field	Indicator
Indicator Title	Incidence rate of primary post-tonsillectomy haemorrhage
Rationale	This indicator was selected because: 1. Tonsillectomy is one of the commonest otorhinolaryngology surgical procedures and can be conducted by the specialist as well as trained medical officers. It can potentially cause significant morbidity and mortality. 2. Internationally, the standard for primary post-tonsillectomy haemorrhage is less than 3%.
Definition of Terms	Primary haemorrhage: 1. Haemorrhage which occurs within 24 hours of surgery. 2. The haemorrhage shall be objectively identified clinically (e.g. active bleeding on the tonsillar bed).
Inclusion and Exclusion Criteria	Inclusion Criteria: All tonsillectomies performed. Exclusion Criteria: 1. Tonsillectomy done as part of other procedures (e.g. sleep apnoea surgery). 2. Bleeding due to patient's premorbid (e.g. bleeding disorder). Secondary haemorrhage: bleeding after 24 hours of surgery.
Indicator Type	Rate Based Outcome Indicator
Formula	$(\text{Number of primary post-tonsillectomy haemorrhages} \div \text{Total number of tonsillectomies performed}) \times 100\%$
Numerator	Number of primary post-tonsillectomy haemorrhages
Denominator	Total number of tonsillectomies performed
Target	$\leq 3\%$
Data Collection Frequency	Monthly
Tracer Methodology	Trace all tonsillectomy cases from operating theatre records and surgical logs. Review patient clinical notes within 24 hours post-surgery to identify documented primary haemorrhage. Verify clinical evidence (e.g. active bleeding on tonsillar bed) from ward records and postoperative monitoring charts. Cross-check complication reporting forms and incident reports. Exclude cases meeting defined exclusion criteria. Validate totals against theatre registry and admission records.

Field	Indicator
PIC (Person In charge)	ORL Surgeon, Medical Officer, Ward Nurse, OT Nurse, ORL Clinic Coordinator or any other related appointed person

09C

**Service
Standard 09C:
Clinical
Services
(Obstetrics
and
Gynaecology
Services)**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09C: Clinical Services (Obstetrics and Gynaecology Services)

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
Facility With Specialists			
01	Emergency and Elective Caesarean Rates	< 30%	Monthly
02	Percentage of Undiagnosed ureteric injury for benign gynaecological surgery/condition	≤ 1%	Six-monthly
03	Maternal Mortality Ratio (sentinel event)	0	Monthly
04	Incidence of 3rd and 4th degree perineal tear following vaginal delivery	≤ 10%	Monthly

PI No	Indicator	Target	Reporting Frequency
District Facility Without Specialists (Maternity Services)			
01	Emergency and Elective Caesarean Rates	-	Monthly
02	Maternal Mortality Ratio (sentinel event)	0	Monthly
03	Incidence of 3rd and 4th degree perineal tear following vaginal delivery (Target: less than 5%)	< 5%	Monthly

Performance Indicator 01

Field	Indicator
Indicator title	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 and Exclusion Criteria	Inclusion Criteria: All cases of caesarean sections conducted during a specific period: Exclusion Criteria: All modes of deliveries other than Caesarean sections
Indicator Type	Rate Based Outcome Indicator
Formula	$\text{Emergency and Elective Caesarean Rate (\%)} = (\text{Number of Emergency CS} + \text{Number of Elective CS} \div \text{Total Number of Deliveries}) \times 100$
Numerator	Total number of emergency and elective caesarean sections performed within the reporting period.

Field	Indicator
Denominator	Total number of deliveries conducted during the same reporting period, regardless of mode of delivery.
Target	Facility with Specialists: < 30% Facility without Specialists:
Data Collection Frequency	Monthly
Tracer Methodology	Random audit of at least 10 caesarean section case notes per month. Cross-checking against operating theatre registers and maternal review board records. Spot interviews with attending clinicians to verify justification for emergency versus elective classification.
Person In charge (PIC)	Obstetrics and Gynaecology Head of Department, Specialists, Medical Officers, Staff Nurses, Midwives, Data Personnel, any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of undiagnosed ureteric injury for benign gynaecological surgery/condition
Rationale	This indicator was selected because: 1. 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. 2. 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. 3. 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, excruciating pain and infection. 4. To ensure competency and adherence to safety in performing hysterectomy for benign gynaecological conditions.
Definition of Terms	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. Benign Gynaecological Surgery – Hysterectomy for benign gynaecological condition. Undiagnosed ureteric injury – Failure to recognise ureteric injury during surgery
Inclusion and Exclusion Criteria	Inclusion Criteria: All cases of unrecognised intraoperative ureteric injury who had undergone obstetric and gynaecological surgery including LSCS Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	(Number of patients with undiagnosed intraoperative ureteric injury / Total numbers of hysterectomy done for benign gynaecological condition) X 100%
Numerator	Number of patients with undiagnosed intraoperative ureteric injury

Field	Indicator
Denominator	Total numbers of hysterectomy done for benign gynaecological condition
Target	≤ 1%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review surgical records of all hysterectomy cases with urology referral within 30 days post-operation; audit intraoperative complication logs; cross-check with readmission records and incident reporting systems.
Person In charge (PIC)	Obstetrics and Gynaecology Head of Department, Specialists, Medical Officers, Staff Nurses, Midwives, Data Personnel, any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator title	Maternal Mortality Ratio (MMR)
Rationale	This indicator was selected because: 1. This indicator reflects maternal health and enables safety considerations in reducing maternal mortality. 2. 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 and Exclusion Criteria	Inclusion Criteria: All direct and indirect maternal deaths Exclusion Criteria: Fatalities during but unrelated to a pregnancy are termed fortuitous maternal deaths.
Indicator Type	Sentinel Event
Formula	NIL
Numerator	NIL

Field	Indicator
Denominator	NIL
Target	Zero (0) maternal deaths; every occurrence requires full investigation.
Data Collection Frequency	Monthly
Tracer Methodology	Audit of all maternal deaths with classification into direct, indirect, or fortuitous causes; verification of maternal death review documentation; assessment of referral pathways, response timelines, and community linkage for late-presenting obstetric emergencies.
Person In charge (PIC)	Obstetrics and Gynaecology Head of Department, Specialists, Medical Officers, Staff Nurses, Midwives, Data Personnel, any other related appointed person

Performance Indicator 04

Field	Indicator
Indicator title	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 and Exclusion Criteria	Inclusion Criteria: Patients who underwent vaginal deliveries in the hospital: 1. Without instrumentation 2. Sustained third (3rd) degree and fourth (4th) degree perineal laceration/tear Exclusion Criteria: Patients who delivered outside of the hospital
Indicator Type	Rate Based Outcome Indicator
Formula	Numerator / Denominator
Numerator	Number of patients with 3rd and 4th degree tear following vaginal delivery without instrumentation in the hospital
Denominator	Total number of vaginal deliveries without instrumentation in the hospital X 100
Target	District Facility without specialist: ≤ 5 Facility with specialists: $\leq 10\%$
Data Collection Frequency	Monthly
Tracer Methodology	Audit of all vaginal delivery records; cross-checking operating theatre repair logs with labour room documentation; verification of complication reporting forms by the quality assurance team.

Field	Indicator
Person In charge (PIC)	Obstetrics and Gynaecology Head of Department, Specialists, Medical Officers, Staff Nurses, Midwives, Data Personnel, any other related appointed person

09D

**Service
Standard 09D
Clinical
Services
(Paediatric
Services)**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09D: Clinical Services (Paediatric Services)

Performance Indicator Summary

There is tracking and trending of specific performance indicators which include but not limited to at least three (3) of the following:

PI No	Indicator	Target	Reporting Frequency
01	Percentage of Mortality and Morbidity Audits/Meetings Being Conducted in the Department with Documentation of Cases Discussed	$\geq 30\%$	Six-monthly
02	Percentage of Paediatric Patients with Unplanned Readmission to Paediatric Ward within ($\leq$) 48 Hours of Discharge	$\leq 0.5\%$	Six-monthly
03	Community-Acquired Pneumonia Death Rate	$\leq 0.5\%$	Six-monthly
04	Percentage of Survival of All Livebirths with Birthweight between 1000–1499g	$\geq 85\%$	Six-monthly

Performance Indicator 01

Field	Indicator
Full Title	Percentage 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. (e.g.: 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 and Exclusion Criteria	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 (declared disaster activation).
Indicator Type	Rate Indicator – Clinical Governance Compliance
Formula	$\frac{\text{(Number of mortality/morbidity cases discussed in M\&M meetings in six-monthly)}}{\text{Total number of mortality/morbidity cases in the same six-month}} \times 100$
Numerator	Number of mortality/morbidity cases discussed and documented in M&M meetings within the reporting year
Denominator	Total number of mortality/morbidity cases recorded in the hospital within the same reporting year

Field	Indicator
Target	≥ 30%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review signed minutes, case summaries, attendance lists, and QI logs; verify HOD certification; assess whether learning points were disseminated to all staff within the department as part of the audit cycle.
Person In charge (PIC)	Head of Department/Quality Manager or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Paediatric Patients with Unplanned Readmission to Paediatric Ward within ($\leq$) 48 Hours of Discharge
Rationale	Unplanned readmission is often considered to be the result of suboptimal care in the previous admission leading to readmission.
Definition of Terms	Unplanned readmission: It includes the following criteria: 1. Patient being readmitted for the management of the same clinical condition (main diagnosis) he or she was discharged. 2. Readmission was not scheduled. 3. Readmission to the same hospital. 4. This does not include readmission requested by next-of-kin or another department. 5. This does not include patients were readmitted for different reason but have the same underlying conditions ('other diagnosis'). Same clinical condition: Same diagnosis as refer to the ICD 11.
Inclusion and Exclusion Criteria	Inclusion Criteria: All paediatric inpatient discharges from Paediatric Ward. Exclusion Criteria: Neonates of < 28 days of life.
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of patients with unplanned readmissions to Paediatric Ward within ($\leq$) 48 hours of discharge
Denominator	Total number of paediatric patients discharged during the same period of time the numerator data was collected
Target	$\leq 0.5\%$
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Data to be collected in the Paediatric Ward. Data suggested to be collected on the day of readmission from patient's case notes; denominator from admission & discharge record book/HIS. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Paediatric Department / Paediatric Specialist /Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Community-Acquired Pneumonia Death Rate
Rationale	Pneumonia is a common childhood infection where mortality can be reduced by careful management.
Definition of Terms	Community Acquired Pneumonia (CAP): Pneumonia acquired from normal social contact as opposed to being acquired during hospitalization and confirmed by radiological or laboratory investigations. It is the final main diagnosis written during discharge which is the cause of admission. It is not the admission diagnosis as it may change. Discharge diagnosis of just Pneumonia is also taken as CAP. Death due to CAP: Underlying cause of death is CAP/pneumonia and its complication.
Inclusion and Exclusion Criteria	Inclusion Criteria: All children aged between 1 month and 5 years with CAP or Pneumonia as main diagnosis. Exclusion Criteria: 1. Hospital-acquired pneumonia (Pneumonia that develops after 72 hours of admission). 2. Children with severe chronic condition and who are under palliative management of Advance Care Plan.
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of deaths due to community-acquired pneumonia in children aged between 1 month and 5 years
Denominator	Total number of cases admitted for community-acquired pneumonia in children aged between 1 month and 5 years
Target	$\leq 0.5\%$
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Data to be collected in the Paediatric Ward/PICU/PHDW/GICU/other related area. Data suggested to be collected from patient's case notes and admission & discharge record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Paediatric Department / Paediatric Specialist/ Medical Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	Percentage of Survival of All Livebirths with Birthweight between 1000–1499g
Rationale	1. This group of infants comprises a significant proportion of patients who utilize NICU and special care nursery resources. 2. Their survival impacts significantly on the under 5 survival targets.
Definition of Terms	Livebirth: Born alive. Survival: Alive at discharge. Discharge: Alive/dead/transferred out. BBA (Born Before Arrival): Babies who are born alive outside the hospital.
Inclusion Criteria	Inclusion Criteria: All livebirth infants born in the hospital/referred to the hospital with birthweight between 1000–1499g. Exclusion Criteria: 1. Babies born with major/lethal congenital anomalies (LCM). 2. Born before arrival (BBA).
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of livebirths with birthweight between 1000–1499g who are alive at discharge
Denominator	Total number of livebirths with birthweight between 1000–1499g who are discharged
Target	≥ 85%
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Data to be collected in the Paediatric Neonatology Unit/PICU/PHDW/GICU/other related area. Data suggested to be collected from patient's case notes and daily census. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Paediatric Department / Neonatologist / Medical Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

09E

Service Standard 09E: Clinical Services (Cardiology)

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09E: Clinical Services (Cardiology)

Performance Indicator Summary

There is tracking and trending of specific performance indicators of the following where appropriate:

PI No	Indicator	Target	Reporting Frequency
01	Mortality and morbidity review of patients with acute myocardial infarction. (Morbidity discussion based on the departments discretion)	100%	Monthly
02	Rate of “Normal” Diagnostic Coronary Angiogram	< 5%	Monthly
03	Major Complication Rate during Diagnostic Coronary Angiogram	< 1%	Monthly
04	Major Complication Rates during Percutaneous Coronary Intervention (Death, acute myocardial infarction, stroke)	< 1%	Monthly
05	Percutaneous Coronary Intervention (PCI) within 90 minutes after hospital arrival “Door to Balloon” Time	90%	Monthly
06	Percentage of high-risk Acute Coronary Syndrome (ACS) cases undergoing Cardiac Catheterisation during the index admission	≥ 90%	Monthly
07	Percentage of Heart Failure Mortality Rate during index hospitalisation	≤ 10%	Monthly
08	Percentage of Heart Failure Readmission Rate at 1-month	≤ 15%	Monthly

Performance Indicator 01

Field	Indicator
Indicator title	Mortality and morbidity review of patients with acute myocardial infarction. (Morbidity discussion based on the departments discretion)
Rationale	This indicator was selected because: 1. Acute Myocardial Infarction is a frequent cause of hospital death nationally. 2. 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, and deaths of patients with Acute Myocardial Infarction) conducted at department/hospital level.
Inclusion and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients (admitted with Acute Myocardial Infarction) that had mortality and morbidity reviews conducted on each case
Denominator	Total number of cases (admitted with Acute Myocardial Infarction) scheduled for mortality and morbidity reviews
Target	100%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Cross-reference discharge diagnoses and death registries; verify inclusion of AMI cases in M&M meeting minutes; randomly trace reviewed cases to assess completeness and depth of discussion.
Person In charge (PIC)	Head of Cardiology Department or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	Rate of “Normal” Diagnostic Coronary Angiogram
Rationale	This indicator was selected because: 1. Coronary Angiogram is a frequent investigation to diagnose coronary artery disease 2. This indicator measures clinical effectiveness.
Definition of Terms	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. “Normal” Coronary Angiogram: “Normal” findings from a coronary angiogram will indicate mild (<30%) or no stenosis of the coronary arteries.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients who had undergone coronary angiogram. Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients who had coronary angiogram done and found ‘normal’
Denominator	Total number of patients who had coronary angiogram done
Target	< 5%
Data Collection Frequency	Monthly
Tracer Methodology	Review of angiogram reports. Confirmation of minimal or no stenosis (less than 30%). Audit of pre-angiogram documentation to verify clinical indication.
Person In charge (PIC)	Interventional Cardiologist, Cardiology Data Officer, or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	Major Complication Rate during Diagnostic Coronary Angiogram
Rationale	This indicator was selected because: 1. Chest pain can be a symptom of coronary artery disease (CAD), and coronary angiogram can show any stenosis or occlusion of coronary arteries. 2. Coronary angiogram test does involve some risks. This indicator measures the clinical effectiveness of care and competency of the healthcare professional.
Definition of Terms	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. 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: 1. Death 2. Acute Myocardial Infarction 3. Stroke
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients who had cardiac catheterization done Exclusion Criteria: NA
Indicator Type	Rate Based Output Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients who had major complications during / and within 24 hours after diagnostic coronary angiogram.
Denominator	Total number of patients who had diagnostic coronary angiogram done
Target	< 1%
Data Collection Frequency	Monthly
Tracer Methodology	Review of complication logbooks and cardiac catheterisation laboratory audit reports. Cross-verification of incident reports with

Field	Indicator
	discharge summaries. Root cause analysis for any death, myocardial infarction, or stroke identified.
Person In charge (PIC)	Cardiac Catheterisation Laboratory Head Nurse, Interventional Cardiologist any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator title	Major Complication Rates during Percutaneous Coronary Intervention
Rationale	This indicator was selected because: 1. 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	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, rotator, etc Major Complications from Percutaneous Coronary Intervention include: 1. Death 2. Acute Myocardial Infarction 3. Stroke
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients who had Percutaneous Coronary Intervention done Exclusion Criteria: NA
Indicator Type	Rate Based Output Indicator
Formula	$\text{Numerator} / \text{Denominator} \times 100\%$
Numerator	Number of patients who had major complications during / and within 24 hours after Percutaneous Coronary Intervention
Denominator	Total number of patients who had Percutaneous Coronary Intervention done
Target	< 1%
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check cardiac catheterisation laboratory logs with electronic medical record incident reports. Verification of complication diagnoses using post-procedure summaries. Root cause analysis for any identified complications, including review of angiographic footage where applicable.
Person In charge (PIC)	Interventional Cardiologist, Cardiac Catheterisation Laboratory Clinical Coordinator or any other related appointed person.

Performance Indicator 05

Field	Indicator
Indicator title	Percutaneous Coronary Intervention (PCI) within 90 minutes after hospital arrival “Door to Balloon” Time
Rationale	This indicator was selected because: 1. Acute Myocardial Infarction is a frequent cause of hospital death nationally. This indicator measures clinical effectiveness
Definition of Terms	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. 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 and Exclusion Criteria	Inclusion Criteria: All cases with Acute Myocardial Infarction with indications for Primary Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of Acute Myocardial Infarction patients who had primary PCI done within 90 minutes after hospital arrival
Denominator	Total number of Acute Myocardial Infarction patients admitted and had primary PCI done
Target	90%
Data Collection Frequency	Monthly
Tracer Methodology	Audit of acute myocardial infarction case notes, emergency department logs, percutaneous coronary intervention procedural timestamps, and cardiac catheterisation laboratory reports to verify door-to-balloon time intervals.
Person In charge (PIC)	Consultant Cardiologist/Head of Cardiology Unit or any other related appointed person.

Performance Indicator 06

Field	Indicator
Indicator title	Percentage of high-risk Acute Coronary Syndrome (ACS) cases undergoing Cardiac Catheterisation during the index admission
Rationale	This indicator was selected because: 1. Acute Coronary Syndrome (ACS) is a frequent cause of hospital death nationally. This indicator measures clinical effectiveness
Definition of Terms	High risk Acute Coronary Syndrome (ACS): 1. For STEMI: TIMI Risk Score ≥ 6 2. For NSTEMI – TIMI Risk Score ≥ 5
Inclusion and Exclusion Criteria	Inclusion Criteria: All cases of high-risk acute coronary syndrome (ACS) Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator $\times 100\%$
Numerator	Number of high-risk acute coronary syndrome (ACS)
Denominator	Total number of patients of high-risk acute coronary syndrome (ACS) admitted and undergoing coronary angiogram during index admission
Target	$\geq 90\%$
Data Collection Frequency	Monthly
Tracer Methodology	Case audit of documented TIMI scores in patient medical records, review of admission logs, and verification of procedure registers in the cardiac catheterisation laboratory to confirm angiography was performed during the same admission.
Person In charge (PIC)	Consultant Cardiologist/Medical Officer of the Cardiology Unit or any other related appointed person.

Performance Indicator 07

Field	Indicator
Indicator title	Percentage of Heart Failure Mortality Rate during index hospitalisation
Rationale	This indicator was selected because: 1. Heart failure is a debilitating and deadly condition with high re-hospitalisation rates and dismal survival rates comparable to most cancers. In Asian countries, heart failure is the commonest cardiac cause of hospitalization (representing ~ 24% of all cardiac admissions), and the 5-year survival rate in patients with heart failure is only 32%. The 1year mortality rate for South-East Asia is 13%. 2. This indicator measures clinical effectiveness.
Definition of Terms	ICD 10 – Code for heart failure 150 which include: 1. 150.0 Congestive Heart Failure (CHF) 2. 150.1 Left Ventricular Failure (LVF) 3. 150.9 Heart Failure, Unspecified
Inclusion and Exclusion Criteria	Inclusion Criteria: All cases of heart failure Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of mortality cases due to heart failure during index hospitalisation
Denominator	Total number of hospitalised heart failure patients
Target	≤ 10%
Data Collection Frequency	Monthly
Tracer Methodology	Mortality audit of heart failure cases, cross-referenced with discharge diagnoses, death certification records, and clinical audit reports to confirm cause of death and index admission status.
Person In charge (PIC)	Internal Medicine Physician or Cardiologist responsible for inpatient heart failure management, or any other related appointed person.

Performance Indicator 08

Field	Indicator
Indicator title	Percentage of Heart Failure Readmission Rate at 1-month
Rationale	This indicator was selected because: Heart failure is a debilitating and deadly condition with high re-hospitalisation rates and dismal survival rates comparable to most cancers. 30-day readmission rate ranges from 2.5 - 25% globally with Malaysian 30-day readmission rate of 17.8%. In Asian countries, heart failure is the commonest cardiac cause of hospitalization (representing ~24% of all cardiac admissions), and the 5-year survival rate in patients with heart failure is only 32%. The 30-day readmission rate (RR) for heart failure (HF) was chosen as the indicator because it is one of the quality representations of inpatient and outpatient care and potential cost reduction by preventing readmission. The United States national rate of readmission for HF is 23%. This indicator measures clinical effectiveness
Definition of Terms	1. ICD 10 – Code for heart failure 150 which include: 150.0 Congestive Heart Failure (CHF) 150.1 Left Ventricular Failure (LVF) 150.9 Heart Failure, Unspecified
Inclusion and Exclusion Criteria	Inclusion Criteria: All cases of heart failure Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	$\text{Numerator} / \text{Denominator} \times 100\%$
Numerator	Number of heart failure patients readmitted within one month after discharge of the index admission
Denominator	Total number of hospitalised heart failure patients in one year
Target	$\leq 15\%$
Data Collection Frequency	Monthly
Tracer Methodology	Discharge coding and readmission tracking through the hospital electronic medical record or clinical registry. Sampling of heart failure diagnostic codes with linkage to admission and discharge logs to confirm unplanned readmissions within 30 days.

Field	Indicator
Person In charge (PIC)	Cardiology Unit Discharge Coordinator or Heart Failure Clinic Lead, or any related appointed person.

09F

**Service
Standard 09F:
Clinical
Services
(Oncology)**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 9F: Clinical Services – Oncology Services – Performance Indicator Summary

There is tracking and trending of specific performance indicators not limited to but at least three (3) of the following:

PI No	Indicator	Target	Reporting Frequency
01	Percentage of mortality and morbidity audits/meetings conducted in the department with documented cases	>30%	Six-monthly
02	Percentage of patients who developed extravasation during chemotherapy treatment	<0.1%	Six-monthly
03	Percentage of oncology therapy prescription errors (from prescription to administration)	0	Monthly

Performance Indicator 01

Field	Indicator
Full Title	Percentage 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. Documentation: Official minutes or notes taken during the meeting with attendance list (certified by the Hospital Director/ Person-In Charge (PIC)
Inclusion and Exclusion Criteria	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 (declared disaster activation).
Indicator Type	Rate Indicator – Clinical Governance Compliance
Formula	$\frac{\text{(Number of mortality/morbidity cases discussed in M\&M meetings in six-monthly)}}{\text{Total number of mortality/morbidity cases in the same six-month}} \times 100$
Numerator	Number of mortality/morbidity cases discussed and documented in M&M meetings within the reporting year
Denominator	Total number of mortality/morbidity cases recorded in the hospital within the same reporting year
Target	≥ 30%

Field	Indicator
Data Collection Frequency	Six-monthly
Tracer Methodology	Review signed minutes, case summaries, attendance lists, and QI logs; verify HOD certification; assess whether learning points were disseminated to all staff within the department as part of the audit cycle.
Person In charge (PIC)	Head of Department/Quality Manager or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of patients developed extravasation during chemotherapy treatment
Rationale	This indicator was selected because: 1. Extravasation is a grave complication of chemotherapy miss-delivery and can lead to devastating effects on the patient. 2. 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. 3. 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	Chemotherapy Treatment: All types of intravenous administration of chemotherapeutic agents. 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 and Exclusion Criteria	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
Indicator Type	Rate Based Outcome Indicator
Formula	(Numbers or frequency of extravasation during chemotherapy treatment / Total number of chemotherapy infusions (including via Chemoport) x 100

Field	Indicator
Numerator	Numbers or frequency of extravasation during chemotherapy treatment
Denominator	Total number of chemotherapy infusions (including via Chemoport)
Target	<0.1%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review of chemotherapy administration records, incident reporting logs, and pharmacy preparation documentation. Verification of extravasation severity grading through clinical notes and nursing documentation.
Person In charge (PIC)	Oncologists, chemotherapy nurses, pharmacy unit, or other related appointed person

Performance Indicator 03

Field	Indicator
Indicator title	Percentage of oncology therapy prescription errors (from prescription to administration)
Rationale	This indicator was selected because: 1. The occurrence of oncology therapy prescription 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. 2. The occurrence of error in oncology therapy prescription can lead to devastating effects on the patient. The large number 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	Oncology Therapy Prescription Error (from prescription to administration): Any preventable event that may cause or lead to inappropriate use or patient harm while the chemotherapy drug is in the control of the healthcare provider from prescription to administration. Such events may be related to errors in professional practice, healthcare products, procedures, and systems, including order communication; product labelling, packaging, prescribing; reconstitution; dispensing; administration; monitoring and use.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients on chemotherapy drugs (oral & infusion) Exclusion Criteria: NA
Indicator Type	Sentinel Event
Formula	Numerator / Denominator
Numerator	Numbers of Oncology Therapy Prescription Errors made in the process of prescribing, ordering, dispensing, reconstitution and administration of cytotoxic drug in the month
Denominator	Total number of Oncology Therapy Prescriptions (from prescription to administration) in the month
Target	0
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Audit of oncology pharmacy logs, incident reporting systems, prescribing system outputs, and medication administration charts. Cross-matching of identified errors with near-miss reporting databases to capture both actual and intercepted events.
Person In charge (PIC)	Oncologists, pharmacists, chemotherapy nurses, quality unit and any other related appointed person

09I

Service Standard 09I: Clinical Services (Psychiatry and Mental Health)

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09I: Clinical Services (Psychiatry and Mental Health) Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of Mortality and Morbidity Audits/Meetings Being Conducted in the Department with Documentation of Cases Discussed	≥ 30%	Six-monthly
02	Percentage of Unplanned Re-admission Within 48 Hours of Discharge	<0.5%	Monthly
03	Additionally, subspecialty-specific performance indicators shall be added when applicable. Subspecialties such as Forensic Psychiatry, Child and Adolescent Psychiatry, Community Psychiatry etc shall each monitor any other two (2) indicators to support their respective goals and objectives.		

Performance Indicator 01

Field	Indicator
Full Title	Percentage 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. (e.g.: 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 and Exclusion Criteria	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 (declared disaster activation).
Indicator Type	Rate Indicator – Clinical Governance Compliance
Formula	$(\text{Number of mortality/morbidity cases discussed in M\&M meetings in six-monthly} \div \text{Total number of mortality/morbidity cases in the same six-month}) \times 100$
Numerator	Number of mortality/morbidity cases discussed and documented in M&M meetings within the reporting year
Denominator	Total number of mortality/morbidity cases recorded in the hospital within the same reporting year

Field	Indicator
Target	≥ 30%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review signed minutes, case summaries, attendance lists, and QI logs; verify HOD certification; assess whether learning points were disseminated to all staff within the department as part of the audit cycle.
Person In charge (PIC)	Head of Department/Quality Manager or any other related appointed person.

Performance Indicator 02

Field	Indicator
Full Title	Percentage of Unplanned Re-admission Within 48 Hours of Discharge
Rationale	This indicator was selected because: - Unplanned re- admissions are 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 48 hours of discharge. Reference: Technical Specifications for Clinical Services Quality Indicators (CliSQI) 2026
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 $\leq$ 48 hours of previous discharge). This does not include readmission requested by next-of-kin or another department. Same Condition: ICD-11 diagnosis code matches initial admission.
Inclusion and Exclusion Criteria	Inclusion Criteria: - All inpatient discharges from wards. - All subspecialty patients discharged from ward within the same general department. Exclusion Criteria: - Patients of < 12 years of age. - AOR (at own risk) discharged patients during the first admission. - Patients that were discharged from wards under different department
Indicator Type	Rate Based Outcome Indicator
Formula	$\left(\frac{\text{Number of patients with unplanned readmissions to department within } (\leq) 48 \text{ hours of discharge}}{\text{Total number of patients discharged during the same period of time the numerator data was collected}} \right) \times 100$
Numerator	Number of patients with unplanned readmissions to department within ($\leq$) 48 hours of discharge

Field	Indicator
Denominator	Total number of patients discharged during the same period of time the numerator data was collected
Target	<0.5%
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check discharge and readmission logs; verify ICD-11 diagnosis match; validate timestamps; review inpatient notes and discharge summaries for premature discharges.
Person In charge (PIC)	Head of Department/Medical Officer/Ward Manager or any other related appointed person.

09K

**Service
Standard 09K:
Clinical
Services
(Palliative
Care)**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09K: Clinical Services (Palliative Care) Performance Indicator Summary

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

PI No.	Indicator	Target	Reporting Frequency
01	Percentage of Unplanned Re-admission Within 48 Hours of Discharge	<0.5%	Monthly
02	Percentage of inpatients with severe cancer pain on initial encounter whose pain had been significantly reduced within ($\leq$) 24 hours of therapy	$\geq 80\%$	Six-monthly
03	Percentage of severe opioid toxicity requiring reversal with naloxone due to inappropriate opioid administration or prescription	0%	Six-monthly
04	Number of palliative care patients dying without proper documentation on end-of-life care discussions		
05	Percentage of palliative care patients receiving at least one (1) spiritual care assessment		
06	Survey on patient/family experience and satisfaction with service provided		

Performance Indicator 01

Field	Indicator
Full Title	Percentage of Unplanned Re-admission Within 48 Hours of Discharge
Rationale	This indicator was selected because: 1. Unplanned re- admissions are often considered to be the result suboptimal care in the previous admission leading to re-admission 2. Patients receiving good quality clinical services should not be subjected to unplanned re-admissions within 48 hours of discharge. Reference: Technical Specifications for Clinical Services Quality Indicators (CliSQI) 2026
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 $\leq$ 48 hours of previous discharge). This does not include readmission requested by next-of-kin or another department. Same Condition: ICD-11 diagnosis code matches initial admission.
Inclusion and Exclusion Criteria	Inclusion Criteria: 5. All inpatient discharges from wards. 6. All subspecialty patients discharged from ward within the same general medicine department (Includes CCU, CRW, nephrology wards etc). Exclusion Criteria: 7. Patients of < 12 years of age. 8. AOR (at own risk) discharged patients during the first admission. 9. Patients that were discharged from wards under different department
Indicator Type	Rate Based Outcome Indicator
Formula	$\left(\frac{\text{Number of patients with unplanned readmissions to department within } (\leq) 48 \text{ hours of discharge}}{\text{Total number of patients discharged during the same period of time the numerator data was collected}} \right) \times 100$
Numerator	Number of patients with unplanned readmissions to department within $(\leq)$ 48 hours of discharge

Field	Indicator
Denominator	Total number of patients discharged during the same period of time the numerator data was collected
Target	<0.5%
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check discharge and readmission logs; verify ICD-11 diagnosis match; validate timestamps; review inpatient notes and discharge summaries for premature discharges.
Person In charge (PIC)	Head of Department/Medical Officer/Ward Manager or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Inpatients with Severe Cancer Pain on Initial Encounter Whose Pain Had Been Significantly Reduced within ($\leq$) 24 Hours of Therapy
Rationale	1. Cancer pain is one of the main symptoms managed in palliative care and it has been documented that about 90% of cancer pain can be relieved with routine pain medications such as opioid analgesia. 2. All palliative care services should be able to achieve good pain relief in over 90% of cancer pain patients. Source: CliSQI Medical Programme 2024 — Palliative Medicine, Indicator 1.
Definition of Terms	Cancer pain: Pain directly or indirectly due to cancer. Severe cancer pain: Pain score 7/10 or more. Significantly reduced pain: Reduction of pain severity of at least ($\geq$) 3 points from baseline pain score. Therapy: Pain medications such as opioid analgesia. Inpatient: Patients admitted to a dedicated palliative care bed or referred to the palliative care team from other wards.
Inclusion and Exclusion Criteria	Inclusion Criteria: All in-patients with severe cancer pain reviewed by the palliative care service that has been followed up continuously for more than 24 hours. Exclusion Criteria: 1. All patients who are unable to self-report pain with established unidimensional pain scores. 2. Patients not receiving analgesia as prescribed by the palliative care service due to patient refusal or unauthorized medication adjustment by other clinicians.
Indicator Type	Rate-based outcome indicator
Formula	$(\text{Number of inpatients with severe cancer pain reviewed by the palliative care service whose pain had been significantly reduced within 24 hours} \div \text{Total number of inpatients with severe cancer pain reviewed by the palliative care service}) \times 100\%$

Field	Indicator
Numerator	Number of inpatients with severe cancer pain reviewed by the palliative care service whose pain had been significantly reduced within 24 hours
Denominator	Total number of inpatients with severe cancer pain reviewed by the palliative care service
Target	≥ 80%
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Palliative wards or wards that cater for the above condition. Data suggested to be collected from patient's case notes and record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Palliative Medicine Department / Palliative Care Specialist / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of Severe Opioid Toxicity Requiring Reversal with Naloxone due to Inappropriate Opioid Administration or Prescription
Rationale	1. Opioid analgesia is an essential medication that is commonly used in the management of cancer pain. Although opioids are considered dangerous drugs, WHO and international pain and palliative care organisations worldwide advocate its use and promote safe and appropriate techniques to manage cancer pain effectively. 2. MOH has developed a CPG Management of Cancer Pain (July 2010) and in this document detail of safe and effective use of opioid analgesia has been specified. 3. Clinicians should adhere to these safe practices to avoid incidences of opioid toxicity which can result in pre-mature death of a patient receiving palliative care. 4. This indicator is to measure the safe practice of opioid prescription and administration in patients under the care of a Palliative Medicine specialist. Source: CliSQI Medical Programme 2025 — Palliative Medicine, Indicator 2.
Definition of Terms	Opioid: Morphine, oxycodone, fentanyl, methadone. Severe opioid toxicity: Toxicity due to excessive administration of opioid analgesia resulting in respiratory depression requiring the use of naloxone. Inappropriate administration: Incorrect delivery of opioid analgesia to a patient in terms of dose or route of administration. Inappropriate prescription: Prescription of opioid analgesics not justified according to the guidance of the MOH CPG on cancer pain management.
Inclusion and Exclusion Criteria	Inclusion Criteria: All new patients under the care of the Palliative Care team. Exclusion Criteria: 1. Patients with opioid prescription not under supervision of Palliative Care team.

Field	Indicator
	2. Patients developing severe opioid toxicity due to metabolic changes as a consequence of primary illness or comorbidities. 3. Patients prescribed naloxone inappropriately.
Indicator Type	Rate-based outcome indicator
Formula	(Number of patients developed severe opioid toxicity requiring reversal with naloxone due to inappropriate opioid administration or prescription ÷ Total number of new patients referred to Palliative Care team) × 100%
Numerator	Number of patients developed severe opioid toxicity requiring reversal with naloxone due to inappropriate opioid administration or prescription
Denominator	Total number of new patients referred to Palliative Care team
Target	0%
Data Collection Frequency	Six-monthly
Tracer Methodology	Data to be collected in the Palliative wards or wards that cater for the above condition. Data suggested to be collected from patient's case notes, incident reporting forms, and pharmacy Daily Defined Dose (DDA) record book. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Palliative Medicine Department / Palliative Care Specialist / Pharmacist / Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	Number of Palliative Care Patients Dying Without Proper Documentation on End-of-Life Care Discussions
Rationale	There is evidence from documentation that service providers should routinely engage in goals of care discussions with patients, caregivers and families. Goals of care discussions are discussions about what is most important to the patient, that will help align treatment to patient values and preferences. Palliative care providers should initiate such discussions early in the illness trajectory, and revisit periodically or with any change in clinical condition. Patients dying without documented goals of care discussions represent a gap in patient-centred care delivery and may indicate that end-of-life preferences were not elicited, documented, or honoured. Source: National Standards for Palliative Care with Implementation Guide, Malaysia — Standard 5.1, Suggested Indicator 1.
Definition of Terms	Goals of care discussion: Discussions about what is most important to the patient, that will help align treatment to patient values and preferences. End-of-life care discussion: Documented conversation with the patient, caregiver and/or family covering values, goals, preferences regarding care at end of life including preferred place of care, preferred place of death, medical treatment, and comfort measures. Proper documentation: A written record in the patient's case notes evidencing that a goals of care or end-of-life discussion was conducted and the outcomes recorded.
Inclusion and Exclusion Criteria	Inclusion Criteria: All palliative care patients who died during the reporting period under the care of the palliative care service. Exclusion Criteria: 1. Patients who died within 24 hours of referral to palliative care service where insufficient time was available to conduct a goal of care discussion. 2. Patients who explicitly declined goals of care discussions, with refusal documented.
Indicator Type	Count-based sentinel indicator

Field	Indicator
Formula	Count of palliative care patients who died in the reporting period without documented goals of care / end-of-life care discussions in the case notes.
Numerator	Number of palliative care patients who died without documented end-of-life care discussions
Denominator	Not applicable (count-based sentinel indicator) Note: For contextual reporting, may also be expressed as a rate: (Number of patients dying without documentation ÷ Total number of patient deaths in the palliative care service) × 100%
Target	
Data Collection Frequency	
Tracer Methodology	Review of case notes for all palliative care patients who died during the reporting period. Auditor to verify presence or absence of documented goals of care discussion or end-of-life care discussion in the patient record. All deaths in the reporting period to be reviewed.
Person In charge (PIC)	Head of Palliative Medicine Department / Palliative Care Specialist / Palliative Care Coordinator or any other related appointed person.

Performance Indicator 05

Field	Indicator
Indicator Title	Percentage of Palliative Care Patients Receiving At least One (1) Spiritual Care Assessment
Rationale	A holistic assessment addressing physical, social, spiritual, and psychological aspects helps identify the needs of patients requiring palliative care, which can then be addressed by the interdisciplinary team. There must be documentation of regular spiritual assessment for both patients and families, which can be performed by any member of the palliative care team. For Class B+C providers, relevant spiritual issues should also be addressed in the individualised care plan. The use of validated spiritual assessment tools (e.g. FICA, HOPE) helps ensure consistency, improves communication within the multidisciplinary team, and improves the quality and completeness of assessments. Source: National Standards for Palliative Care with Implementation Guide, Malaysia — Standard 4.1, Suggested Indicator 2.
Definition of Terms	Spiritual care assessment: A structured or documented assessment of a patient's spiritual needs, encompassing sources of meaning, beliefs, existential concerns, and may include but is not limited to religion. This may be conducted using a validated tool such as the FICA Spiritual Assessment Tool or the HOPE Spiritual Assessment Tool, or documented through comprehensive case note entries. Holistic assessment: An assessment that covers the patient and family's physical, psychological, social and spiritual needs. Episode of care: A period of contact between a patient and a palliative care service provided by one palliative care service in one setting. An episode of care ends when the setting of care changes.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All palliative care patients seen over the audit period. 2. Audit sample may include: all patients (or a fixed consecutive number) seen over a defined period, or all patient notes within an episode of care. Exclusion Criteria: 1. Patients who explicitly declined spiritual assessment, with refusal documented.

Field	Indicator
	2. Patients seen for a single consultation only with no follow-up within the episode of care.
Indicator Type	Rate-based process indicator
Formula	$(\text{Number of patients with documented spiritual screening or spiritual care assessment} \div \text{Total number of patients seen over the audit period}) \times 100\%$
Numerator	Number of palliative care patients with documented spiritual care assessment during the episode of care
Denominator	Total number of palliative care patients seen over the audit period
Target	
Data Collection Frequency	
Tracer Methodology	Review of case notes and holistic assessment forms for all palliative care patients in the audit sample. Auditor to verify presence of documented spiritual assessment (structured tool or case note entry) within the episode of care. Suggested audit tools: FICA Spiritual Assessment Tool, HOPE Spiritual Assessment Tool.
Person In charge (PIC)	Head of Palliative Medicine Department / Palliative Care Specialist / Spiritual Care Provider or any other related appointed person.

Performance Indicator 06

Field	Indicator
Indicator Title	Survey on Patient/Family Experience and Satisfaction with Service Provided
Rationale	Commitment to a high quality of care to patients and their families should be an integral part of palliative care services. Regular feedback from patients and families is essential for evaluating and improving the quality of palliative care services. Feedback should include the following domains: symptom control, psychosocial support, communication, and bereavement care. Services should use a validated tool to evaluate patient and caregiver experience and/or satisfaction, and implement improvement measures where necessary. Source: National Standards for Palliative Care with Implementation Guide, Malaysia — Standard 13.3, Suggested Indicator 1.
Definition of Terms	Patient/family experience: The sum of all interactions, shaped by a palliative care service's culture, that influence patient and family perceptions across the continuum of care. Satisfaction with service: The degree to which patients and families perceive that the palliative care service has met their expectations and needs. Validated survey tool: A psychometrically validated instrument used to measure patient and family experience and/or satisfaction (e.g. FAMCARE-2, VOICES survey, or equivalent validated tool).
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All palliative care patients and/or their family caregivers who are able to provide feedback. 2. Bereaved family members may be included for post-death survey components. Exclusion Criteria: 1. Patients who lack capacity to consent and have no available family caregiver to provide feedback. 2. Family members who decline participation.
Indicator Type	Evidence-based quality improvement indicator
Formula	Evidence of routine use of a patient and family satisfaction survey.

Field	Indicator
	For quantitative reporting: $(\text{Number of patients/families who returned a completed satisfaction survey} \div \text{Total number of patients/families invited to complete the survey}) \times 100\%$
Numerator	Number of patients/families who returned a completed satisfaction survey
Denominator	Total number of patients/families invited to complete the satisfaction survey in the reporting period
Target	
Data Collection Frequency	
Tracer Methodology	Evidence of routine use of a validated patient and family satisfaction survey. Auditor to verify that surveys are systematically administered, results are collated, and that improvement measures have been implemented based on survey findings. Survey domains should include: symptom control, psychosocial support, communication, and bereavement care.
Person In charge (PIC)	Head of Palliative Medicine Department / Palliative Care Coordinator / or any other related appointed person.

09L

Service Standard 09L: Clinical Services (Dental)

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 09I: Clinical Services (Dental)

Performance Indicator Summary

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

PI No.	Indicator	Target	Reporting Frequency
General Dental Services			
01	Percentage of Mortality and Morbidity Audits/Meetings Being Conducted in the Department with Documentation of Cases Discussed	>30%	Six-monthly
02	Percentage of unplanned re-admission within 48 hours of discharge	≤ 2%	Monthly
03	Rate of unplanned return to Operating Theatre within the same hospital admission following surgery		Monthly
04	Completion of medical report within 14 days	≥ 95%	Monthly
Paediatric Dentistry			
05	Percentage of patients with waiting time ≤ 90 minutes	> 90%	Monthly
06	Percentage of patients with active caries within 6 months after comprehensive dental treatment under GA	< 10%	Monthly
07	Percentage of failed restorations within 6 months after comprehensive dental treatment under GA	≤ 2.5%	Monthly
08	Oral soft tissue injury during dental procedure in children	≤ 10%	Monthly

Specialty: Special Care Dentistry			
09	Percentage of new referrals seen by specialists within 6 weeks of referral	85%	Monthly
10	Percentage of patients developing osteoradionecrosis following dental extractions in patients who have undergone head and neck radiotherapy for malignancies	< 10%	Monthly
Specialty: Forensic Odontology			
11	Percentage of new referral cases seen by Forensic Odontology Unit/Department within 5 days from the referral date	90%	Yearly
12	Percentage of medical reports for estimating the age of living individuals completed and submitted within 10 working days	90%	Yearly
Specialty: Oral Maxillofacial Surgery (OMFS)			
13	Percentage of patients seen within seventy-five (75) minutes at Oral Surgery Clinic	90%	Monthly
14	Percentage of elective cases under GA cancelled	10%	Monthly
15	Percentage of medical report completed within 14 working days	95%	Monthly
16	Elective cases of surgical removal of impacted tooth done as daycare	50%	Monthly
17	Published/presented study (Research/Case Report/Audit/QA/Innovation)	1/year/centre	Yearly
18	Percentage of patients undergoing lower third molar surgery prescribed with antibiotic	10%	Monthly
19	Nerve injury following surgical removal of impacted lower third molar (PSI)	5%	Monthly

Specialty: Oral Medicine and Oral Pathology			
20	Waiting time at Oral Medicine Clinic (< 45 minutes)	≥ 95%	Monthly
21	Number of oral biopsies reported within 5 working days	≥ 85%	Monthly
22	Number of oral biopsies reported within 14 working days	≥ 95%	Monthly

Performance Indicator 01 – General Dental Services

Field	Indicator
Full Title	Percentage 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. (e.g.: 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 and Exclusion Criteria	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 (declared disaster activation).
Indicator Type	Rate Indicator – Clinical Governance Compliance
Formula	$(\text{Number of mortality/morbidity cases discussed in M\&M meetings in six-monthly} \div \text{Total number of mortality/morbidity cases in the same six-month}) \times 100$
Numerator	Number of mortality/morbidity cases discussed and documented in M&M meetings within the reporting year
Denominator	Total number of mortality/morbidity cases recorded in the hospital within the same reporting year

Field	Indicator
Target	≥ 30%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review signed minutes, case summaries, attendance lists, and QI logs; verify HOD certification; assess whether learning points were disseminated to all staff within the department as part of the audit cycle.
Person In charge (PIC)	Head of Department/Quality Manager or any other related appointed person.

Performance Indicator 02

Field	Indicator
Full Title	Percentage of unplanned re-admission within 48 hours of discharge
Rationale	This indicator was selected because: - Unplanned re- admissions are 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 48 hours of discharge. Reference: Technical Specifications for Clinical Services Quality Indicators (CliSQI) 2026
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 $\leq$ 48 hours of previous discharge). This does not include readmission requested by next-of-kin or another department. Same Condition: ICD-11 diagnosis code matches initial admission.
Inclusion and Exclusion Criteria	Inclusion Criteria: All surgical inpatient discharges from surgical wards Exclusion Criteria: - Patients of < 12 years of age. - AOR (at own risk) discharged patients during the first admission. - Patients that were discharged from wards under different department
Indicator Type	Rate Based Outcome Indicator
Formula	$\left(\frac{\text{Number of surgical patients with unplanned readmissions to surgical department within } (\leq) 48 \text{ hours of discharge}}{\text{Total number of surgical patients discharged during the same period of time the numerator data was collected}} \right) \times 100$
Numerator	Number of surgical patients with unplanned readmissions to surgical department within ($\leq$) 48 hours of discharge
Denominator	Total number of surgical patients discharged during the same period of time the numerator data was collected

Field	Indicator
Target	≤ 2%
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check discharge and readmission logs; verify ICD-11 diagnosis match; validate timestamps; review inpatient notes and discharge summaries for premature discharges.
Person In charge (PIC)	Head of Department/Medical Officer/Ward Manager or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	Rate of unplanned return to Operating Theatre within the same hospital admission following surgery
Rationale	This indicator was selected because: 1. 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. 2. 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 and Exclusion Criteria	Inclusion Criteria: All cases that had undergone surgery Inclusive of day of surgery admission Exclusion Criteria: Endoscopy cases and day care cases
Indicator Type	Rate Based Outcome Indicator
Formula	Numerator / Denominator × 100%
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
Denominator	Total number of cases undergone surgical procedure under GA in the month
Target	-
Data Collection Frequency	Monthly
Tracer Methodology	Review of operation theatre records, surgical admission logs, patient medical records, anaesthesia records, post-operative notes, incident reports, and unplanned return to operating theatre documentation to identify cases requiring repeat surgical intervention under general anaesthesia during the same hospital admission.
Person In charge (PIC)	Head of Department/Medical Officer/Ward Manager or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	% of Medical Report Completed within 14 Working Days
Rationale	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	The length of time taken for doctor to complete a medical report i.e. must be within 14 working days from the time of acceptance until submission to medical record officer in-charge. Medical Report: 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. Doctor: Dental Officer or Specialist
Inclusion and Exclusion Criteria	Inclusion Criteria: All requests of medical report from Medical Record office e.g. plain medical record, Insurance, SOCSO etc. Exclusion Criteria: Nil
Indicator Type	Rate-based process indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of reports dispatched within stipulated time (14 working days)
Denominator	Total number of medical reports requested AND completed in the particular month
Target	$\geq 95\%$
Data Collection Frequency	Monthly
Tracer Methodology	Review of the department medical report record book. Personnel in charge of medical report requests to record date of receipt and date of

Field	Indicator
	completion for each report. Officer/Matron/Sister/DSA in charge of KPI to verify records monthly. Data entered into OMFS KPI Data collection.
Person In charge (PIC)	Head of OMFS Department / OMFS Specialist / Officer/Matron/Sister/DSA in charge of medical report records / or any other related appointed person.

Performance Indicator 05 – Paediatric Dentistry

Field	Indicator
Indicator Title	Percentage of Patients with Waiting Time ≤ 90 Minutes
Rationale	To provide timely access to paediatric dental services so that treatment is provided within an acceptable time frame to improve clinical care and patient satisfaction.
Definition of Terms	Waiting time: The time taken from patient registration at the counter to being attended to by the clinician.
Inclusion and Exclusion Criteria	Inclusion Criteria: All paediatric dental patients with appointments. Exclusion Criteria: Walk-in patients without appointments.
Indicator Type	Rate-based process indicator
Formula	$(\text{Number of patients seen within 90 minutes} \div \text{Total number of appointment patients}) \times 100\%$
Numerator	Number of patients seen within 90 minutes of registration
Denominator	Total number of appointment patients attending the Paediatric Dentistry clinic
Target	> 90%
Data Collection Frequency	Monthly
Tracer Methodology	Review of clinic attendance records and registration logs. Auditor to verify time of registration against time of clinical encounter for a random sample of patient records. Minimum sample: 30 records or 10% of monthly cases, whichever is greater. or any other related appointed person.
Person In charge (PIC)	Head of Paediatric Dentistry Unit / Dental Specialist (Paediatric Dentistry) / Dental Officer in charge of clinic operations / or any other related appointed person.

Performance Indicator 06 - – Paediatric Dentistry

Field	Indicator
Indicator Title	Percentage of Patients with Active Caries within 6 Months After Comprehensive Dental Treatment Under GA
Rationale	The development of active caries within 6 months following comprehensive dental treatment under general anaesthesia is an indicator of treatment quality and the effectiveness of preventive counselling provided to the patient and caregivers.
Definition of Terms	Active caries: New or recurrent carious lesions detected clinically at follow-up within 6 months post-GA treatment. Comprehensive dental treatment under GA: Full-mouth dental rehabilitation carried out under general anaesthesia.
Inclusion and Exclusion Criteria	Inclusion Criteria: All paediatric patients who received comprehensive dental treatment under GA and attended follow-up within 6 months. Exclusion Criteria: Patients who did not attend their 6-month follow-up appointment.
Indicator Type	Rate-based outcome indicator
Formula	$(\text{Number of patients with active caries at 6-month follow-up} \div \text{Total number of patients reviewed at 6-month post-GA}) \times 100\%$
Numerator	Number of patients with active caries within 6 months after comprehensive dental treatment under GA
Denominator	Total number of patients reviewed at 6-month follow-up after comprehensive dental treatment under GA
Target	< 10%
Data Collection Frequency	Monthly
Tracer Methodology	Review of clinical notes and follow-up appointment records for patients who underwent comprehensive dental treatment under GA. Auditor to confirm caries assessment documented at 6-month review.

Field	Indicator
	Sample: all eligible follow-up cases in the reporting month. or any other related appointed person.
Person In charge (PIC)	Head of Paediatric Dentistry Unit / Dental Specialist (Paediatric Dentistry) / Dental Officer managing GA follow-up cases / or any other related appointed person.

Performance Indicator 07 – Paediatric Dentistry

Field	Indicator
Indicator Title	Percentage of Failed Restorations within 6 Months After Comprehensive Dental Treatment Under GA
Rationale	Failed restorations within 6 months of comprehensive dental treatment under GA reflect the quality and durability of restorations performed. Monitoring this indicator supports continuous improvement in clinical technique and material selection.
Definition of Terms	Failed restoration: A restoration that has fractured, displaced, or shows secondary caries within 6 months of placement. Comprehensive dental treatment under GA: Full-mouth dental rehabilitation carried out under general anaesthesia.
Inclusion and Exclusion Criteria	Inclusion Criteria: All paediatric patients who received comprehensive dental treatment under GA and attended follow-up within 6 months. Exclusion Criteria: Patients who did not attend their 6-month follow-up appointment.
Indicator Type	Rate-based outcome indicator
Formula	$(\text{Number of failed restorations within 6 months} \div \text{Total number of restorations reviewed at 6-month post-GA}) \times 100\%$
Numerator	Number of failed restorations within 6 months after comprehensive dental treatment under GA
Denominator	Total number of restorations reviewed at 6-month follow-up after comprehensive dental treatment under GA
Target	$\leq 2.5\%$
Data Collection Frequency	Monthly
Tracer Methodology	Review of clinical notes and follow-up records for patients who underwent comprehensive dental treatment under GA. Auditor to verify documentation of restoration assessment at 6-month review. Sample: all eligible follow-up cases in the reporting month.

Field	Indicator
Person In charge (PIC)	Head of Paediatric Dentistry Unit / Dental Specialist (Paediatric Dentistry) / Dental Officer managing GA follow-up cases / or any other related appointed person.

Performance Indicator 08 – Paediatric Dentistry

Field	Indicator
Indicator Title	Oral Soft Tissue Injury During Dental Procedure in Children
Rationale	Oral soft tissue injury occurring during a dental procedure is an adverse event that may result in patient harm and loss of confidence in dental services. Monitoring this indicator supports patient safety in paediatric dental settings.
Definition of Terms	Oral soft tissue injury: Unintended injury to the lips, tongue, cheeks, gingiva, or palate that occurs during or as a direct result of a dental procedure.
Inclusion and Exclusion Criteria	Inclusion Criteria: All paediatric dental patients who sustained oral soft tissue injury during a dental procedure. Exclusion Criteria: Injuries attributable to patient non-cooperation that occurred despite appropriate preventive measures being in place.
Indicator Type	Rate-based outcome indicator
Formula	$(\text{Number of oral soft tissue injuries during dental procedures} \div \text{Total number of dental procedures performed on children}) \times 100\%$
Numerator	Number of oral soft tissue injuries during dental procedures in children
Denominator	Total number of dental procedures performed on children in the reporting period
Target	$\leq 10\%$
Data Collection Frequency	Monthly
Tracer Methodology	Review of incident reports, clinical notes, and adverse event logs. Auditor to verify documentation of any soft tissue injury, its nature, and management. All reported cases to be reviewed.
Person In charge (PIC)	Head of Paediatric Dentistry Unit / Dental Specialist (Paediatric Dentistry) / Patient Safety Officer / or any other related appointed person.

Performance Indicator 09 – Special Care Dentistry

Field	Indicator
Indicator Title	Percentage of New Referrals Seen by Specialists within 6 Weeks of Referral
Rationale	To provide timely and appropriate access to dental services so that treatment is provided within the acceptable time frame to improve clinical care.
Definition of Terms	New referral: Patients accepted for care for the first time at the Special Care Dentistry (SND) unit. All new patients seen by a specialist for consultation after first referral.
Inclusion and Exclusion Criteria	Inclusion Criteria: All new cases referred to the SND unit for the first time Exclusion Criteria: 1. Patients who do not fit the SND referral criteria (e.g. Category 'Lain-lain') 2. New referral of repeat cases (e.g. patient seen in 2015 becomes a new patient when first seen in 2016) 3. Referral for maintenance care requesting appointment more than 6 weeks 4. Inpatient
Indicator Type	Rate-based process indicator
Formula	$(\text{Number of new referral cases seen by specialist within 6 weeks from the date of referral} \div \text{Total number of new referrals}) \times 100\%$
Numerator	New referral cases seen by specialist within 6 weeks from the date of referral
Denominator	Total number of new referrals
Target	85%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review of referral records (PG 210A/B, PG317, L.P. 8-Pin.1/09) and appointment logs. Auditor to verify date of referral against date of first specialist consultation. Minimum sample: 30 records or 10% of monthly new referrals, whichever is greater.
Person In charge (PIC)	Head of Special Care Dentistry Unit / Dental Specialist (Special Care Dentistry) / Dental Officer managing referral appointments / or any other related appointed person.

Performance Indicator 10 – Special Care Dentistry

Field	Indicator
Indicator Title	Percentage of Patients Developing Osteoradionecrosis Following Dental Extractions in Patients Who Have Undergone Head and Neck Radiotherapy for Malignancies
Rationale	Safe delivery of healthcare which minimises harm or risk to service users. Osteoradionecrosis is a serious complication following dental extraction in patients who have received head and neck radiotherapy. Monitoring promotes safe dental practice and appropriate risk assessment.
Definition of Terms	Osteoradionecrosis: The development of a non-healing dental socket for duration of 3 months following removal of tooth in patients who have undergone radiotherapy for head and neck malignancy. Non-healing socket: Loss of covering oral mucosa and the exposure of necrotic bone.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients who have undergone head and neck radiotherapy for malignancies and subsequently undergone dental extractions at the SND clinic. Exclusion Criteria: Patients with a history of use of bisphosphonates (oral and IV), anti-resorptive agent denosumab, and anti-angiogenic agent Sunitinib.
Indicator Type	Rate-based outcome indicator
Formula	$\frac{\text{(Number of patients who develop osteoradionecrosis of the jaw following dental extractions)}}{\text{Total number of patients who have received head and neck radiotherapy and had dental extractions}} \times 100\%$
Numerator	The number of patients who develop osteoradionecrosis of the jaw following dental extractions
Denominator	The number of patients who have received head and neck radiotherapy and had dental extractions
Target	< 10%
Data Collection Frequency	Monthly
Tracer Methodology	Review of clinical notes and treatment cards (L.P. 8-Pin.1/09) for patients with history of head and neck radiotherapy who underwent dental extractions. Auditor to verify follow-up documentation at 3 months post-extraction. All eligible cases to be reviewed.

Field	Indicator
Person In charge (PIC)	Head of Special Care Dentistry Unit / Dental Specialist (Special Care Dentistry) / Dental Officer managing oncology dental patients / or any other related appointed person.

Performance Indicator 11 – Forensic Odontology

Field	Indicator
Indicator Title	Percentage of New Referral Cases Seen by Forensic Odontology Unit/Department within 5 Days from the Referral Date for Subsequent Management
Rationale	The main purpose of this indicator is to measure the effectiveness and responsiveness of the Forensic Odontology service in upholding the legal system in Malaysia. Any late response could lead to missing evidence which could potentially disturb the management and investigation of the case including police investigations and court proceedings.
Definition of Terms	New cases: New forensic odontology cases referred from any health facilities or enforcement agencies. This includes identification of unknown human remains, age estimation of living persons, abuse or assault cases (physical or sexual), and bitemark injury cases.
Inclusion and Exclusion Criteria	Inclusion Criteria: All new cases received by the Forensic Odontology Unit/Department. Exclusion Criteria: All cases referred for consultation only.
Indicator Type	Rate-based process indicator (Percentage)
Formula	$(\text{Number of new cases seen within five (5) working days after the date of referral} \div \text{Total number of new cases received by Forensic Odontology Unit/Department in a year}) \times 100\%$
Numerator	Number of new cases seen within five (5) working days after the date of referral
Denominator	Total number of new cases received by Forensic Odontology Unit/Department in a year
Target	90%
Data Collection Frequency	Annually

Field	Indicator
Tracer Methodology	Review of Forensic Odontology Registration Book (PG FOD 201 Pind 1/2022). Auditor to verify date of referral receipt against date of first case attendance for all new cases in the reporting year.
Person In charge (PIC)	Head of Forensic Odontology Unit/Department / Forensic Odontology Specialist / Dental Officer in charge of case registration / or any other related appointed person.

Performance Indicator 12 – Forensic Odontology

Field	Indicator
Indicator Title	Percentage of Medical Reports for Estimating the Age of Living Individuals Completed and Submitted to Relevant Authorities within 10 Working Days
Rationale	This indicator measures the rate and percentage of medical reports produced and submitted to referring government agencies for age estimation procedures in living individuals. Timely submission supports smooth execution of subsequent investigations and legal system proceedings in Malaysia.
Definition of Terms	Age estimation procedure: Procedure to estimate the age of a person based on dental development and changes. Applied to undocumented persons, illegal immigrants, or unregistered individuals. Government agencies/authority: PDRM, <i>Jabatan Imigresen Malaysia</i>, <i>Angkatan Penguatkuasa Maritim Malaysia</i>, <i>Jabatan Kebajikan Malaysia</i>. Date of examination: Date of examination done by Forensic Odontology Unit/Department at own or other facilities. Date of complete documents: Date that Forensic Odontology Unit/Department received complete documents from the referring party.
Inclusion Criteria	All living cases referred for age estimation.
Exclusion Criteria	All living cases referred for reasons other than age estimation.
Indicator Type	Rate-based process indicator (Percentage)
Formula	$(\text{Number of medical reports produced and submitted to referring authority within 10 working days} \div \text{Total number of new living cases received by Forensic Odontology Unit/Department in a year}) \times 100\%$
Numerator	Number of medical reports produced and submitted to the referring authority within ten (10) working days after referral

Field	Indicator
Denominator	Total number of new living cases received by Forensic Odontology Unit/Department in a year
Target	90%
Data Collection Frequency	Annually
Tracer Methodology	Review of Forensic Odontology Registration Book (PG FOD 201 Pind 1/2022) and report submission records. Auditor to verify date of examination or date of complete document receipt against date of report submission for all eligible cases in the reporting year.
Person In charge (PIC)	Head of Forensic Odontology Unit/Department / Forensic Odontology Specialist / Dental Officer responsible for report preparation / or any other related appointed person.

Performance Indicator 13 – Oral Maxillofacial Surgery (OMFS)

Field	Indicator
Indicator Title	Percentage of Patients Seen within Seventy-Five (75) Minutes at Oral Surgery Clinic
Rationale	Patient-centred services must be given priority to prompt attention to patient needs by reducing waiting times for consultation. This indicator aligns with the Circular of the Director General of Health Malaysia No. 6/2004 on steps to reduce waiting time in MOH facilities.
Definition of Terms	Waiting time: The time taken for a patient to be attended to by the doctor starting from the patient's registration time. Doctor: Dental Officer or Specialist.
Inclusion and Exclusion Criteria	Inclusion Criteria: Appointment cases only. *If the patient comes earlier than appointment time (> 1 hour), the appointment time will be taken as reference. Exclusion Criteria: New referrals; walk-in patients; emergency cases.
Indicator Type	Rate-based process indicator
Formula	$\left(\frac{\text{Number of patients seen within 75 minutes in a specified month}}{\text{Total number of appointment patients attending OMFS clinic within the particular month}} \right) \times 100\%$
Numerator	Number of patients seen within seventy-five (75) minutes in a specified month
Denominator	Total number of appointment patients attending Oral & Maxillofacial Surgery clinic within the particular month
Target	>90%
Data Collection Frequency	Monthly
Tracer Methodology	Review of clinic attendance records. Time of registration and time of clinical encounter to be recorded at patient card or data collection

Field	Indicator
	slip. Officer/Matron/Sister/DSA in charge of KPI to identify patients who waited more than 75 minutes and record at end of each session. Data entered monthly into OMFS KPI Google Sheet.
Person In charge (PIC)	Head of OMFS Department / OMFS Specialist / Officer/Matron/Sister/DSA in charge of KPI data collection / or any other related appointed person.

Performance Indicator 14 – Oral Maxillofacial Surgery (OMFS)

Field	Indicator
Indicator Title	Percentage of Elective Cases Under GA Cancelled
Rationale	The effectiveness of preoperative preparation should be reflected in a reduced rate of cancellation for elective surgeries, thereby increasing patient satisfaction. Cancellations increase surgical wait times, exacerbate costs, and can have a major effect on patients and their families both psychologically and physically.
Definition of Terms	Cancellation: Cases initially listed for elective surgery under General Anaesthesia and subsequently cancelled by the Anaesthetist, Surgeon, or Patient. Note: The patient has been admitted to the ward and the OT list has been finalised.
Inclusion and Exclusion Criteria	Inclusion Criteria: All listed elective surgical cases for OMFS. The patient has been admitted to the ward and the OT list is finalised. Exclusion Criteria: Standby cases; Daycare cases
Indicator Type	Rate-based process indicator
Formula	$\left(\frac{\text{Number of listed cases that were cancelled in a specified month}}{\text{Total number of cases listed for elective surgery in the corresponding month}} \right) \times 100\%$
Numerator	Number of listed cases that were cancelled in a specified month
Denominator	Total number of cases listed for elective surgery in the corresponding month
Target	<10%
Data Collection Frequency	Monthly
Tracer Methodology	Review of signed elective OT lists submitted to the Anaesthesia Department. Officer/Matron/Sister/DSA in charge of KPI to obtain numerator and denominator from copies of signed elective OT lists. Data entered monthly into OMFS KPI data collection.

Field	Indicator
Person In charge (PIC)	Head of OMFS Department / OMFS Specialist / Officer/Matron/Sister/DSA in charge of KPI data collection / or any other related appointed person.

Performance Indicator 15 – Oral Maxillofacial Surgery (OMFS)

Field	Indicator
Indicator Title	Percentage of Medical Report Completed within 14 Working Days
Rationale	There is a need to hasten the preparation of medical reports in order to satisfy customers especially for insurance claims, police investigations, and court proceedings. Timeliness of preparation of medical reports is an indication of the efficiency of the Health Information Management Services.
Definition of Terms	Medical Report: Written report of the results of a medical examination of a patient, describing findings, diagnosis, treatment, progress, and events during hospitalisation and follow-up. Doctor: Dental Officer or Specialist. The 14 working days commences from the time of acceptance of the request until submission to the medical record officer in-charge.
Inclusion and Exclusion Criteria	Inclusion Criteria: All requests for medical reports from the Medical Record Office (e.g. plain medical record, insurance, SOCSO). Exclusion Criteria: NIL
Indicator Type	Rate-based process indicator
Formula	$(\text{Number of reports dispatched within 14 working days} \div \text{Total number of medical reports requested AND completed in the particular month}) \times 100\%$
Numerator	Number of reports dispatched within stipulated time (14 working days)
Denominator	Total number of medical reports requested AND completed in the particular month
Target	95%
Data Collection Frequency	Monthly
Tracer Methodology	Review of the department medical report record book. Personnel in charge of medical report requests to record date of receipt and date of

Field	Indicator
	completion for each report. Officer/Matron/Sister/DSA in charge of KPI to verify records monthly. Data entered into OMFS KPI data collection.
Person In charge (PIC)	Head of OMFS Department / OMFS Specialist / Officer/Matron/Sister/DSA in charge of medical report records / or any other related appointed person.

Performance Indicator 16 – Oral Maxillofacial Surgery (OMFS)

Field	Indicator
Indicator Title	Elective Cases of Surgical Removal of Impacted Tooth Done as Daycare
Rationale	To view the utilisation of daycare services in the OMFS discipline to reduce the number of bed occupancy in the ward. The objectives of daycare services in Ministry of Health include allowing the patient to return home on the day of surgery with minimal disruption to daily life, decreasing costs, reducing surgical waiting time, avoiding nosocomial infections, and reducing inpatient admission.
Definition of Terms	Daycare Services: The patient comes into the hospital to undergo a diagnostic or therapeutic procedure and goes home on the same day. Note: Count is per patient, NOT per tooth.
Inclusion and Exclusion Criteria	Inclusion Criteria: All surgical removals of impacted tooth done as daycare. The procedure may be done in a dedicated daycare OT/Ambulatory Care Centre (ACC) or in the GOT for centres without a dedicated daycare OT. Exclusion Criteria: Other surgical cases done as daycare; cases of impacted tooth removal done in elective OT (non-daycare).
Indicator Type	Rate-based process indicator
Formula	$\left(\frac{\text{Number of cases of surgical removal of impacted teeth done under GA as daycare surgery}}{\text{Total number of elective cases of surgical removal of impacted teeth done under GA}} \right) \times 100\%$
Numerator	Number of cases of surgical removal of impacted teeth done under general anaesthesia as daycare surgery
Denominator	Total number of elective cases of surgical removal of impacted teeth done under general anaesthesia
Target	50%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review of signed elective Daycare OT lists and elective OT lists submitted to the Anaesthesia Department. Numerator from Daycare OT list; denominator from both elective OT and Daycare lists. Data entered monthly into OMFS KPI data collection.
Person In charge (PIC)	Head of OMFS Department / OMFS Specialist / Officer/Matron/Sister/DSA in charge of OT and Daycare records / or any other related appointed person.

Performance Indicator 17 – Oral Maxillofacial Surgery (OMFS)

Field	Indicator
Indicator Title	Published/Presented Study (Research/Case Report/Audit/QA/Innovation)
Rationale	To encourage the publication or presentation of studies by any member of the OMFS Department at any local, regional, national, or international forum or journal.
Definition of Terms	Any study that is published or presented at any local, regional, national, or international forum or journal. The study can be any research, case report, audit, QA study, innovation, KMK, or other relevant work. Presentation may be at any scientific meeting, seminar, or convention at any level; in the form of oral presentation or poster. The study may be conducted by any member of the department.
Inclusion and Exclusion Criteria	Inclusion Criteria: All published or presented studies by any member of the OMFS Department. Exclusion Criteria: NIL
Indicator Type	Count-based indicator
Formula	Number of published or presented studies per year per centre
Numerator	Number of published or presented studies in the reporting year
Denominator	Not applicable (count-based indicator)
Target	1 study per year per centre
Data Collection Frequency	Yearly
Tracer Methodology	Review of publication records, conference proceeding certificates, or presentation abstracts submitted by department members. Officer/Matron/Sister/DSA in charge of KPI to collect and verify supporting documentation. Data entered into OMFS KPI Data collection.

Field	Indicator
Person In charge (PIC)	Head of OMFS Department / OMFS Specialist / Officer/Matron/Sister/DSA in charge of KPI data collection / or any other related appointed person.

Performance Indicator 18 – Oral Maxillofacial Surgery (OMFS)

Field	Indicator
Indicator Title	Percentage of Patients Undergoing Lower Third Molar Surgery Prescribed with Antibiotic
Rationale	This indicator is aligned with the National CPG on Antibiotic Prophylaxis against Wound Infection for Oral Surgical Procedures (2nd Edition, 2015), which states that antibiotic prophylaxis is not indicated for surgical removal of lower third molars. Monitoring prescribing rates aims to curb the widespread use of antibiotics and contribute to reducing bacterial resistance.
Definition of Terms	The number of patients who were prescribed antibiotics while undergoing surgical removal of lower impacted third molars. Antibiotics include those prescribed prophylactically (before the procedure) or therapeutically (after the surgery). The procedures can be done in the clinic, daycare, or elective OT.
Inclusion and Exclusion Criteria	Inclusion Criteria: Patients prescribed antibiotics while undergoing surgical removal of lower impacted third molars. Exclusion Criteria: Patients who presented with acute infection where surgical removal is performed as an emergency measure; medically compromised/immunocompromised patients requiring antibiotic cover.
Indicator Type	Rate-based process indicator
Formula	$\left(\frac{\text{Number of impacted lower third molar surgery cases given antibiotics}}{\text{Total number of impacted lower third molar surgery cases done under GA or LA}} \right) \times 100\%$
Numerator	Number of impacted lower third molar surgery cases given antibiotics (by patient)
Denominator	Number of impacted lower third molar surgery cases done under GA or LA (by patient)
Target	10%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review of prescription records, patient treatment cards, and operation notes for all patients who underwent surgical removal of lower impacted third molars. Data collection method to be determined by individual centre. Data entered monthly into OMFS KPI data collection.
Person In charge (PIC)	Head of OMFS Department / OMFS Specialist / Officer/Matron/Sister/DSA in charge of KPI data collection / or any other related appointed person.

Performance Indicator 19 – Oral Maxillofacial Surgery (OMFS)

Field	Indicator
Indicator Title	Nerve Injury Following Surgical Removal of Impacted Lower Third Molar
Rationale	Impacted mandibular third molar teeth are in close proximity to the inferior alveolar, lingual, mylohyoid, and buccal nerves. Sensory disturbances following nerve injury can cause problems with speech and mastication and may adversely affect the patient's quality of life. This indicator is classified as a Patient Safety Indicator (PSI).
Definition of Terms	Nerve injury: Cases involving the inferior alveolar nerve and/or lingual nerve following surgical removal of an impacted lower third molar performed at the institution. Types include: paraesthesia (abnormal sensation), hypoesthesia (reduced sensation), or dysaesthesia (unpleasant abnormal sensation). Note: Count is per tooth.
Inclusion and Exclusion Criteria	Inclusion Criteria: Patients who suffered sensory deficit after surgical removal of lower third molar. Exclusion Criteria: Patients with pre-existing sensory deficit over the distribution of the inferior alveolar and lingual nerve; surgical procedure performed at a different centre.
Indicator Type	Rate-based outcome indicator (Patient Safety Indicator — PSI)
Formula	$\frac{\text{Number of surgical removals of impacted third molar that developed nerve injury}}{\text{All surgical removals of impacted lower third molar under LA or GA}} \times 100\%$ (Count per tooth)
Numerator	Number of surgical removals of impacted third molar tooth that developed nerve injury (per tooth)
Denominator	All surgical removals of impacted lower third molar inclusive of procedures under LA or GA (per tooth)
Target	5%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review of clinical notes, operation records, and post-operative follow-up documentation for all patients who underwent surgical removal of impacted lower third molar. Auditor to confirm nerve injury assessment documented at follow-up. Data entered monthly into OMFS KPI Google Sheet.
Person In charge (PIC)	Head of OMFS Department / OMFS Specialist / Patient Safety Officer / Officer/Matron/Sister/DSA in charge of KPI data collection / or any other related appointed person.

Performance Indicator 20 – Oral Medicine and Oral Pathology

Field	Indicator
Indicator Title	Waiting Time at Oral Medicine Clinic (< 45 Minutes)
Rationale	Timely access to Oral Medicine specialist consultation is essential to ensure prompt diagnosis and management of oral mucosal conditions, which may include potentially malignant disorders.
Definition of Terms	Waiting time: Time taken from when the patient is registered at the counter to being called for examination. Appointment patients: All patients seen at the Oral Medicine Clinic at a specific date and time.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients seen at the Oral Medicine Clinic with a proper appointment for the day. Exclusion Criteria: Walk-in patients (patients without appointment for the day or referral patients from Oral Surgery or the wards); patients with appointment for the day but who arrive more than 20 minutes late than the appointment time
Indicator Type	Rate-based process indicator
Formula	$\left(\frac{\text{Number of patients examined within 45 minutes upon registration}}{\text{Total number of patients examined who meet inclusion and exclusion criteria}} \right) \times 100\%$
Numerator	Number of patients examined within 45 minutes upon registration
Denominator	Total number of patients examined who meet inclusion and exclusion criteria
Target	≥ 95%
Data Collection Frequency	Monthly
Tracer Methodology	Review of clinic attendance records and registration logs. Auditor to verify time of registration against time of clinical encounter for a random sample. Minimum sample: 30 records or 10% of monthly cases, whichever is greater.

Field	Indicator
Person In charge (PIC)	Head of Oral Medicine Unit / Oral Medicine Specialist / Dental Officer in charge of clinic operations / or any other related appointed person.

Performance Indicator 21 – Oral Medicine and Oral Pathology

Field	Indicator
Indicator Title	Number of Oral Biopsies Reported within 5 Working Days
Rationale	Timely reporting of oral biopsy specimens is critical for the prompt diagnosis and management of oral pathological conditions, including potentially malignant disorders and oral cancer. Turnaround time directly impacts clinical decision-making and patient outcomes.
Definition of Terms	Turnaround time: Time taken from when the biopsy specimen is received in the Oral Pathology laboratory to the time the result is available to the clinician.
Inclusion and Exclusion Criteria	Inclusion Criteria: All oral and maxillofacial soft tissue biopsies sent to the Oral Pathology laboratory. Exclusion Criteria: All biopsies requiring special stains, immunostaining, re-gross/recut/deeper sections, decalcification, complex excisional biopsies, surgical resection specimens, and those requiring further clinical and radiological information.
Indicator Type	Rate-based process indicator
Formula	$\left(\frac{\text{Number of oral biopsies reported within 5 working days}}{\text{Total number of biopsies which meet inclusion and exclusion criteria}} \right) \times 100\%$
Numerator	Number of oral biopsies reported within 5 working days
Denominator	Total number of biopsies which meet inclusion and exclusion criteria
Target	≥ 85%
Data Collection Frequency	Monthly
Tracer Methodology	Review of Oral Pathology laboratory log and biopsy result records. Auditor to verify date of specimen receipt against date of result availability to clinician for all eligible specimens in the reporting month.

Field	Indicator
Person In charge (PIC)	Head of Oral Pathology Unit / Oral Pathologist / Oral Medicine Specialist / Laboratory Officer in charge of biopsy reporting / or any other related appointed person.

Performance Indicator 22 – Oral Medicine and Oral Pathology

Field	Indicator
Indicator Title	Number of Oral Biopsies Reported within 14 Working Days
Rationale	All oral and maxillofacial biopsy specimens should be reported within 14 working days to ensure clinicians can make timely management decisions. Monitoring the 14-working-day turnaround provides a comprehensive measure of the Oral Pathology laboratory's overall reporting efficiency.
Definition of Terms	Turnaround time: Time taken from when the biopsy specimen is received in the Oral Pathology laboratory to the time the result is available to the clinician.
Inclusion and Exclusion Criteria	Inclusion Criteria: All oral and maxillofacial soft tissue biopsies sent to the Oral Pathology laboratory. Exclusion Criteria: Cases received for second opinion.
Indicator Type	Rate-based process indicator
Formula	$(\text{Number of oral biopsies reported within 14 working days} \div \text{Total number of oral specimens received}) \times 100\%$
Numerator	Number of oral biopsies reported within 14 working days
Denominator	Total number of oral specimens received
Target	≥ 95%
Data Collection Frequency	Monthly
Tracer Methodology	Review of Oral Pathology laboratory log and biopsy result records. Auditor to verify date of specimen receipt against date of result availability for all oral specimens received in the reporting month.
Person In charge (PIC)	Head of Oral Pathology Unit / Oral Pathologist / Oral Medicine Specialist / Laboratory Officer in charge of biopsy reporting / or any other related appointed person.

10

Service Standard 10: Anaesthetic Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 10: Anaesthetic Services

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	<u>Mandatory:</u> Pain score on discharge from recovery room should be less than four (4)	100%	Monthly
02	Number of adverse events following regional anaesthesia, e.g. prolonged motor blockade, inadvertent dural puncture, Local Anaesthetic (LA) toxicity	Downward trend expected, monitored at facility level.	Monthly
03	Number of patients having prolonged stay in recovery room for than two (2) hours (sentinel event)	0	Monthly
04	Patient satisfaction survey with acute pain service and anaesthetic clinic	Upward trend, with internal target setting determined by the facility.	Six-monthly
05	Percentage of cancellation of elective cases after being passed in the anaesthetic clinic	≤10%	Monthly
06	Subspecialties units in the Anaesthetic Services 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.		

Performance Indicator 01 - Mandatory

Field	Indicator
Indicator Title	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 and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100$
Numerator	Prolonged Motor Blockade: Number of patients who developed motor blockade Inadvertent Dural Puncture: Number of cases of inadvertent dural puncture Local Anaesthesia (LA) Toxicity: Number of patients who developed Local anaesthetics toxicity inadvertent dural puncture
Denominator	Prolonged Motor Blockade: Total number of patients operated under regional anaesthesia Inadvertent Dural Puncture: Total number of cases received epidural anaesthesia/analgesia and CSE Local Anaesthesia (LA) Toxicity: Total number of patients who received local anaesthetics operated for regional anaesthesia
Target	100%
Data Collection Frequency	Monthly
Tracer Methodology	Audit of recovery room records and pain charts. Verification with anaesthesia post-op notes and APS rounds.

Field	Indicator
PIC (Person In charge)	Anaesthesiologist, Medical Officer, Staff Nurse (Recovery Room), Acute Pain Team, Data Collector or any other related appointed person

Performance Indicator 02

Field	Content
Indicator Title	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: 1. The occurrence of adverse events leading to anaesthetic complications of regional anaesthesia may indicate less than optimal anaesthetic care. Patients should receive adequate and effective regional anaesthesia and analgesia for certain types of surgery. 2. Epidural anaesthesia is one of the techniques used for instillation of local anaesthetic into the epidural space to provide anaesthesia. 3. 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 beyond the expected duration of the local anaesthetic 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 accidentally punctures the dura at the level of the injection site iii) Local Anaesthetic (LA) toxicity: While generally safe, local anaesthetic 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 anaesthetics can be local or systemic. Systemic toxicity of anaesthetics most often involves the central nervous system (CNS) or the cardiovascular system.
Inclusion and Exclusion Criteria	Inclusion Criteria: Epidural anaesthesia, Epidural analgesia, Obstetric Analgesia Service, Combine Spinal Epidural (CSE), Spinal anaesthesia, Peripheral Nerve Block, inclusive of day surgery cases Exclusion Criteria: All general anaesthetic (GA) cases

Field	Content
Indicator Type	Rate Based Process Indicator
Formula	Number of adverse events following regional anaesthesia ÷ Total number of regional anaesthesia cases × 100%
Numerator	Number of adverse events following regional anaesthesia
Denominator	Total number of regional anaesthesia cases
Target	Downward trend expected, monitored at facility level.
Data Collection Frequency	Monthly
Tracer Methodology	Use of incident report system, post-op notes, and audit of anaesthetic charts for flagging any complications. Triaged by Anaesthetic Risk Committee if any.
PIC (Person In charge)	Anaesthesiologist, Medical Officer, Staff Nurse, Acute Pain Team, Operating Theatre Personnel, Data Collector, or any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator Title	Number of patients having prolonged stay in recovery room for than two (2) hours (sentinel event)
Rationale	This indicator was selected because: 1. The occurrence of prolonged stay in the recovery room leading to operative complications of anaesthesia may indicate less than optimal care. 2. 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. The reasons for the prolonged stay in the recovery room for more than two (2) hours need to be categorized under surgical or anaesthesia causes. Reference: Prolonged-stay patients in the Post Anaesthesia Care Unit (PACU): A review of the literature. Lalani SB¹, Ali F, Kanji Z.
Inclusion and Exclusion Criteria	Inclusion Criteria: Patients under regional anaesthesia of general anaesthesia Exclusion Criteria: Patients operated under sedation or local anaesthesia administered by surgeons
Indicator Type	Sentinel Event
Formula	Number of patients having prolonged stay in recovery room (> 2 hrs) hours
Numerator	Number of patients having prolonged stay in recovery room (> 2 hrs) hours
Denominator	-
Target	0
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Audit of recovery room logs, time-stamped anaesthesia record sheets, and post-op nurse progress notes. Cross-referenced with handover logs.
PIC (Person In charge)	Anaesthesiologist, Medical Officer, Staff Nurse (Recovery Room), Operating Theatre Personnel, Data Collector or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	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	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. 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 and Exclusion Criteria	Inclusion Criteria: All out-patients and in- patients managed by the Pain Management Team and the Anaesthetic Clinic staff Exclusion Criteria: NA
Indicator Type	Patient Satisfaction Survey
Formula	(Numbers of patient satisfaction survey feedback with $\geq 80\%$ satisfaction level / Total numbers of patient satisfaction survey feedback received) X 100 %
Numerator	Numbers of patient satisfaction survey feedback with $\geq 80\%$ satisfaction level
Denominator	Total numbers of patient satisfaction survey feedback received
Target	Number of patient satisfaction survey feedback with $\geq 80\%$ satisfaction level done every six months (Upward trend)
Data Collection Frequency	Six-monthly
Tracer Methodology	Audit of collected surveys, categorised by APS and anaesthetic clinic. Ensure sampling covers elective, emergency, and day care patients.
PIC (Person In charge)	Pain Management Team, Anaesthetic Clinic staff, Medical Officer, Staff Nurse, Data Collector, or any other related appointed person

Performance Indicator 05

Field	Indicator
Indicator Title	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 and Exclusion Criteria	Inclusion Criteria: Cancellation by Anaesthetic Team 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
Indicator Type	Rate Based Process Indicator
Formula	(Number of elective surgical cancellations after assessment performed in Anaesthetic Clinic / Total number of pre- operative assessment performed in the Anaesthetic Clinic) X 100 %
Numerator	Number of elective surgical cancellations after assessment performed in Anaesthetic Clinic
Denominator	Total number of pre- operative assessment performed in the Anaesthetic Clinic
Target	≤10%
Data Collection Frequency	Monthly
Tracer Methodology	Audit of OT daily logbook, cancellation registers, and pre-op clinic clearance sheets. Cross-verified with OR team meeting minutes

Field	Indicator
PIC (Person In charge)	Anaesthetic Team, Anaesthesiologist, Medical Officer, Staff Nurse, OT Coordinator, Clinic Staff, Data Collector or any other related appointed person.

11

Service Standard 11: Operating Suite Services

Service Standard 11: Operating Suite Services Performance Indicator Summary

There is tracking and trending of specific performance indicators not limited to but at least of the following, a minimum of 5 indicators:

PI No.	Indicator	Target	Reporting Frequency
01	<u>Mandatory</u> Rate of compliance to Safe Surgery Saves Lives (SSSL) practice	100%	Monthly
02	Percentage of Elective Operation Cancellation Rate	<10%	Monthly
03	Percentage of patients awaiting emergency surgery for more than 24 hours due to lack of OT time	<1%	Monthly
04	Number of patients returning to surgery within 24 hours	Sentinel Event	Monthly
05	Time taken for lower segment caesarean section (LSCS) for fetal distress within 30 minutes of informing operating theatre	Sentinel Event	Monthly
06	Number of unnecessary delays in starting surgery after induction of anaesthesia due to lack of personnel or equipment	Sentinel Event	Monthly
07	Number of incidents reported in the operating room	0	Monthly
08	Number of peri-operative mortality and morbidity review		Six-monthly
09	Percentage of cases done as day care or Day of Surgery Admission (DOSA)	30% of all surgeries	Monthly
10	Number of adverse events following positioning (sentinel event)	Sentinel Event	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Rate of compliance to Safe Surgery Saves Lives (SSSL) practice
Rationale	This indicator was selected because: 1. 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 2. 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. 3. 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	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 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.

Field	Indicator
Inclusion and Exclusion Criteria	Inclusion Criteria: All cases sent to operating theatre and scheduled for surgery Exclusion Criteria: There should be no exclusion criteria
Indicator Type	Rate Based Process Indicator
Formula	(Number of cases where WHO Surgical Checklist was used for each patient that had undergone surgery (evidence of copy of the checklist) / Total number of cases operated under General/Regional Anaesthesia in a month) X 100 %
Numerator	Number of cases where WHO Surgical Checklist was used for each patient that had undergone surgery (evidence of copy of the checklist)
Denominator	Total number of cases operated under General/Regional Anaesthesia in a month
Target	100%
Data Collection Frequency	Monthly
Tracer Methodology	Audit 10 random OT cases per month. Verify presence of completed WHO checklist (pre-, intra-, post-op). Crosscheck against anaesthesia records, theatre register, and surgical outcome logs
PIC (Person In charge)	Operating Team, Surgeon, Anaesthetist, Staff Nurse, OT Coordinator, Data Collector or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Elective Operation Cancellation Rate
Rationale	This indicator was selected because: 1. Surgical procedure executed as planned reflects on customer satisfaction. Cancellation may lead to patient's disappointment and may jeopardise surgeon- patient rapport. 2. This indicator reflects the quality of planning for elective operations in surgical based disciplines.
Definition of Terms	Elective Surgery: Surgery is planned for the patient by a surgeon Operation Cancellation: The surgery is cancelled in spite of already in the list for the operating day. Cancellations maybe due to: 1. Patients not turning up for surgery 2. Inadequate OT time caused by over-listing/interruptions by emergencies 3. Surgeon not available, blood not available, elective operations are common. The rates vary depending on how the elective list is prepared. 4. No consent, instrument failure and other reasons
Inclusion and Exclusion Criteria	Inclusion Criteria: All elective surgeries scheduled Exclusion Criteria: Cancellation due to acute medical problems rendering patient unfit for surgery or anaesthesia
Indicator Type	Rate Based Outcome Indicator
Formula	$\frac{\text{Number of elective surgery cancelled in the corresponding period}}{\text{Total number of elective surgeries scheduled in the corresponding period}} \times 100\%$
Numerator	Number of elective surgeries cancelled in the corresponding period
Denominator	Total number of elective surgeries scheduled in the corresponding period
Target	< 10%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review monthly OT schedule vs actual performed cases. Cross-check reason for cancellation via OT logbook, anaesthesia notes, and cancellation records. Categorise as avoidable vs unavoidable.
PIC (Person In charge)	Surgeon, Anaesthetist, OT Coordinator, Staff Nurse, Clinic Staff, Data Collector, or any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of patients awaiting emergency surgery for more than 24 hours due to lack of OT time
Rationale	This indicator was selected because: 1. Emergency surgery has to be performed as early as possible in order to reduce patient morbidity and mortality as well as potential public complaints. 2. This indicator also reflects the timely access and patient centeredness.
Definition of Terms	Waiting time: From the time the patient is ready for emergency surgery to the time the operation takes place.
Inclusion and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	$\frac{\text{(Total number of patients who waited more than (>)24 hours for emergency operation under general anaesthesia/regional anaesthesia/monitored sedation/LA due to lack of OT time)}}{\text{Total number of emergency surgeries done under general anaesthesia/regional anaesthesia/monitored sedation/LA}} \times 100\%$
Numerator	Total number of patients who waited more than (>)24 hours for emergency operation under general anaesthesia/regional anaesthesia/monitored sedation/LA due to lack of OT time
Denominator	Total number of emergency surgeries done under general anaesthesia/regional anaesthesia/monitored sedation/LA
Target	< 1%
Data Collection Frequency	Monthly
Tracer Methodology	Review OT booking log and emergency case activation times. Confirm medical readiness and document delay reason strictly as 'lack of OT slot.' Validate against anaesthetic notes, ward pre-op checklist, and post-event audit summaries.

Field	Indicator
PIC (Person In charge)	Surgeon, Anaesthetist, OT Coordinator, Staff Nurse, OT Staff, Data Collector, or any other related appointed person

Performance Indicator 04

Field	Indicator
Indicator Title	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 and Exclusion Criteria	Inclusion Criteria: Elective surgical procedure performed under general anaesthesia/regional anaesthesia/monitored sedation/LA Exclusion Criteria: 1. Endoscopy cases 2. Day Care cases
Indicator Type	Sentinel Event
Formula	Number of patients returning to OT/surgery within 24 hours following an elective surgical procedure
Numerator	Number of patients returning to OT/surgery within 24 hours following an elective surgical procedure
Denominator	-
Target	0
Data Collection Frequency	Monthly
Tracer Methodology	Match patient OT registry with post-op recovery logs and adverse event reports. Audit case files for timing of re-operation, initial op details, and decision rationale for return. Verify root cause classification.
PIC (Person In charge)	Surgeon, Anaesthetist, OT Coordinator, Staff Nurse, OT Staff, Data Collector or any other related appointed person

Performance Indicator 05

Field	Indicator
Indicator Title	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: 1. 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. 2. 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. 3. 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 Reference: Royal College of Obstetricians and Gynaecologists; Royal College of Anaesthetists: Good Practice No: 11; April 2010.
Definition of Terms	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 in all cases. Examples: 1. Prolonged fetal bradycardia, 2. Cord prolapses 3. Uterine rupture 4. APH/abruption • Cord PH <7.20 5. Pathological CTG 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

Field	Indicator
	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 and Exclusion Criteria	Inclusion Criteria: All cases of emergency caesarean sections for fetal distress Exclusion Criteria: NA
Indicator Type	Sentinel Event
Formula	The number of Emergency Caesarean Sections done for fetal distress within 30 minutes of informing OT over the total number of Emergency Caesarean Sections for fetal distress
Numerator	Number of emergency Caesarean Sections done for fetal distress within 30 minutes of informing the operating theatre (OT) in proportion to the number of emergency caesarean sections done that exceeded the standards.
Denominator	The number of Emergency Caesarean Sections done for fetal distress within 30 minutes of informing OT over the total number of Emergency Caesarean Sections for fetal distress.
Target	0
Data Collection Frequency	Monthly
Tracer Methodology	Compare timestamps of “decision made” and “baby delivered” for all LSCS cases marked urgent for fetal distress. Audit clinical notes, OR logs, and anaesthesia records to confirm compliance. Flag delays for RCA.
PIC (Person In charge)	Obstetrician, Anaesthetist, OT Coordinator, Staff Nurse, Paediatrician, Data Collector, or any other related appointed person

Performance Indicator 06

Field	Indicator
Indicator Title	Number of unnecessary delays in starting surgery after induction of anaesthesia due to lack of personnel or equipment
Rationale	This indicator was selected because: 1. The occurrence of unnecessary delay in starting surgery after induction of anaesthesia indicates less than optimal care. 2. This indicator also reflects timeliness of care and patient centeredness
Definition of Terms	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. Induction of Anaesthesia 1. The administration of a drug or combination of drugs at the beginning of an anaesthetic that results in a state of general anaesthesia. 2. The process of causing general anaesthesia by the administration of pharmaceuticals. 3. For regional anaesthesia or peripheral nerve block, completion of administration of block is equivalent to the phase of induction of Anaesthesia in general anaesthesia. Reference: Medical-dictionary.thefreedictionary.com/induction of anaesthesia
Inclusion and Exclusion Criteria	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
Indicator Type	Sentinel Event
Formula	Number of cases with delay in starting surgery after induction of anaesthesia
Numerator	Number of cases with delay in starting surgery after induction of anaesthesia
Denominator	-

Field	Indicator
Target	0
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check anaesthesia chart timestamps vs incision start times. Review OT log for recorded reasons of delay. Validate with staff attendance logs, equipment readiness checklist, and real-time incident reports.
PIC (Person In charge)	Surgeon, Anaesthetist, OT Coordinator, Staff Nurse, OT Staff, Biomedical Engineer, Data Collector or any other related appointed person

Performance Indicator 07

Field	Indicator
Indicator title	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: 1. 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. 2. Incident Reporting ensures sharing of lessons learnt from incidents, root cause analysis and best practices in patient safety. 3. Incident Reporting facilitates patient safety efforts including the reduction of risk to patients
Definition of Terms	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: 1. 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) 2. 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. 3. Errors are mishaps that have the potential to cause an adverse event. 4. Hazard refers to any threat to safety e.g. unsafe practices, staff conduct, equipment, labels and names. 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

Field	Indicator
	from reported events; and analysing the incidents scientifically in a structured manner through Root Cause Analysis.
Inclusion and Exclusion Criteria	Inclusion Criteria: All types of incidents, near misses, adverse events Exclusion Criteria: NA
Indicator Type	Sentinel Event
Formula	Numerator / Denominator
Numerator	Number of incidents (clinical) reported in the operating theatre over a month
Denominator	-
Target	0
Data Collection Frequency	Monthly
Tracer Methodology	Cross-reference OT incident logbooks, digital risk reporting platforms, and RCA initiation forms. Validate with staff interviews and QRMS dashboards. Include near misses and unsafe practices, not only harm events.
PIC (Person In charge)	Head of the operating theatre (OT), nursing staff, or any other related appointed person

Performance Indicator 08

Field	Indicator
Indicator title	Number of peri-operative mortality and morbidity review
Rationale	This indicator was selected because: 1. The main purpose of the peri- operative mortality and morbidity review is to improve patient management and quality of care. 2. 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	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. Anaesthesiologists and surgeons employ various methods in assessing whether a patient is in optimal condition from a medical standpoint prior to undertaking surgery. 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. 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. Reference: Peri-Operative Mortality Review Ministry of Health, Malaysia.
Inclusion and Exclusion Criteria	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.

Field	Indicator
	3. Radiological procedures performed solely by the Radiologist without a surgeon's involvement 4. Endoscopy (e.g. OGDS/Colonoscopy/ERCP) performed under sedation or/and LA 5. Surgery performed outside OT complex. E.g. Procedure room 6. Obstetric deaths (Pregnancy > 28 weeks). Ectopic pregnancy (< 28 Weeks gestation are included)
Indicator Type	Process Indicator
Formula	Numerator / Denominator
Numerator	Number of peri- operative mortality and morbidity reviews in six (6) months
Denominator	
Target	
Data Collection Frequency	Six-onthly
Tracer Methodology	Confirm review meetings via meeting minutes, attendance logs, and case review summaries. Verify that at least one peri-operative death or complication case was discussed with evidence of learning points and planned QI actions.
PIC (Person In-Charge)	Head of department, surgeons, anaesthesiologists, quality unit and any other related appointed person

Performance Indicator 09

Field	Indicator
Indicator title	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 and Exclusion Criteria	Inclusion Criteria: All surgeries done (day care cases and inpatients) Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator
Numerator	Total number of surgeries done as day care/ DOSA in the month
Denominator	Total number of surgeries (inpatients and DOSA) done in a month X 100%
Target	30% of all surgeries
Data Collection Frequency	Monthly
Tracer Methodology	Audit OT records for DOSA admissions. Validate with patient flow logs, admission time stamps, and discharge records. Spot-check for conversion from DOSA to in-patient due to complications.
PIC	Head of department, surgeons, anaesthesiologists, nursing staff, or any other related appointed person

Performance Indicator 10

Field	Indicator
Indicator title	Number of adverse events following positioning (sentinel event)
Rationale	This indicator was selected because: 1. The occurrence of peripheral nerve injuries following positioning during anaesthesia (surgery) is a reflection of poor patient care. These injuries may produce lasting disability; hence recognition of risks and prevention is essential. 2. This indicator measures the clinical effectiveness of care and patient safety. Positioning is the joint responsibility of the surgeon and anaesthesiologist. 3. Failure to follow professional standards and guidelines may result in positioning injuries and liability.
Definition of Terms	Surgical Positioning (Recommended to be monitored under Surgical Services): All positioning has 3 goals: 1. Maximum exposure to the surgical area while maintaining homeostasis and preventing injury 2. Position must provide the Anaesthetist with adequate access to the patient for airway management, ventilation, medications, and monitoring 3. Promote the enhancement of a satisfactory surgical result 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. 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. 1. Caused by direct pressure on the nerve with the legs in lithotomy position. 2. Nerve compressed against neck of fibula

Field	Indicator
	3. Anaesthetists should monitor and assess patient positioning and protective measures at frequent intervals. 4. Prevented by adequate padding of lithotomy poles.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients undergoing surgery in Lithotomy position under General Anaesthesia Exclusion Criteria: Pre-existing foot drop prior to surgery
Indicator Type	Sentinel Event
Formula	Numerator / Denominator
Numerator	Number of cases that developed adverse events following positioning e.g. foot drop within 24 hours post-surgery
Denominator	-
Target	0
Data Collection Frequency	Monthly
Tracer Methodology	Review post-op neurological assessments, theatre reports, and incident logs. Cross-check surgical position documentation with post-op complaints. Interview PACU staff and include in intra-OT surveillance audits.
PIC	Head of department, surgeons, anaesthesiologists, nursing staff, or any other related appointed person

12

Service Standard 12: Ambulatory Care Services - Day Care Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 12: Ambulatory Care Services - Day Care Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Unplanned Admissions of Ambulatory Care patients as Inpatients	<5%	Three-monthly
02	Cancellation Rate of Ambulatory Care cases	<15%	Three-monthly

Performance Indicator 01

Field	Indicator
Indicator title	Unplanned admissions of Ambulatory Care patients as inpatient.
Rationale	This indicator was selected because: 1. 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 Services. 2. This indicator can be used to assess the quality of Ambulatory Care Services by the number of unplanned admissions as inpatients. 3. Generally, patients receiving safe clinical services as per protocol unless due to patient factor should not be subjected to unplanned admissions.
Definition of Terms	Ambulatory Care: Ambulatory Care is defined as Clinical services, scheduled, and completed in the same day (same calendar day) and does not require the patient to stay overnight in the hospital. The services should include 4 criteria: 1. The patient is scheduled / elective) to undergo treatment. 2. The scheduled Procedures have been done 3. Procedures carried out require a short recovery period together with the complete documentation and the progress of the patient during the observation period. 4. Patients are discharged from the observation ward in the same calendar day. 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 and Exclusion Criteria	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.
Indicator Type	Quality of Care Indicator

Field	Indicator
Formula	(Number of unplanned admissions of Ambulatory Care patient as inpatients / Total number of ambulatory care patients registered during the same period) x 100
Numerator	Number of unplanned admissions of Ambulatory Care patient as inpatients
Denominator	Total number of ambulatory care patients registered during the same period
Target	< 5%
Data Collection Frequency	Three-monthly
Tracer Methodology	Review case notes of unplanned admissions, audit screening compliance, and evaluate clinical documentation
Person In charge (PIC)	Head of department, nursing staff, Ambulatory Care unit, or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator title	Cancellation rate of Ambulatory Care cases
Rationale	This indicator was selected because: 1. This indicator reflects the quality of planning for Ambulatory Care Services. 2. The cancellation of cases listed for elective procedures is common. The rates vary depending on how the list and patients have been prepared. 3. Proper screening and selection of the patient with set criteria should be a prerequisite to select patients for Ambulatory Care Services.
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: 1. Patients not turning up for the procedure. 2. Patients found unfit for procedure on the scheduled day of the Ambulatory Care service 3. Clinician not available, no consent, instrument failure and other less common reasons
Inclusion and Exclusion Criteria	Inclusion Criteria: All types of Ambulatory Care cases registered patients within the Ambulatory Care Unit. Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	(Number of Ambulatory Care patients scheduled for procedures and cancelled during the study period / Total Number of Ambulatory Care patients registered and scheduled for procedures during the study period) x 100
Numerator	Number of Ambulatory Care patients scheduled for procedures and cancelled during the study period
Denominator	Total Number of Ambulatory Care patients registered and scheduled for procedures during the study period
Target	< 15%
Data Collection Frequency	Three-monthly

Field	Indicator
Tracer Methodology	Audit cancelled case records, review scheduling logs, and interview staff to assess reasons and trends
Person In charge (PIC)	Head of department, nursing staff, Ambulatory Care Unit, or any other related appointed person

12A

Service Standard 12A: Ambulatory Care Services – Endoscopy Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 12A: Ambulatory Care Services – Endoscopy Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Cancellation rate of ambulatory endoscopy cases	< 15%	Monthly
02	Percentage of “No Show” of ambulatory endoscopy cases	<2%	Three-monthly

Performance Indicator 01

Field	Indicator
Indicator title	Cancellation Rate of Ambulatory Endoscopy cases
Rationale	This indicator was selected because: 1. This indicator reflects the quality of planning for Ambulatory Endoscopy Services. 2. The cancellation of endoscopy cases listed for elective procedures is common. The rates vary depending on how the list and patients have been prepared. 3. Proper screening and selection of the patient with set criteria should be a prerequisite to select patients for Ambulatory Endoscopy Services.
Definition of Terms	Case Cancellation: Cases listed on the Ambulatory Endoscopy list but the procedure is not done on that particular schedule. Cancellations maybe due to: 1. Patients not turning up for the Endoscopy procedure. 2. Patients found unfit for the procedure on the day of appointment. 3. Inadequate time for the endoscopy procedure caused by over-listing, interruptions by emergencies or inefficiency related 4. Surgeon/Gastroenterologist not available, no consent, instrument failure and other less common reasons
Inclusion and Exclusion Criteria	Inclusion Criteria: All ambulatory patients registered for endoscopy procedure within the Ambulatory Care Unit. Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	$\left(\frac{\text{Number of ambulatory patients scheduled for endoscopy procedure and cancelled for the specified period}}{\text{Total number of ambulatory patients scheduled for Endoscopy procedure for the specified period}} \right) \times 100$
Numerator	Number of ambulatory patients scheduled for endoscopy procedure and cancelled for the specified period
Denominator	Total number of ambulatory patients scheduled for Endoscopy procedure for the specified period
Target	< 15%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review of appointment schedules, cancellation records, and endoscopy unit reports. Interviews with scheduling staff and clinicians involved in pre-procedure assessment to determine causes and trends of cancellation.
Person In charge (PIC)	Head of Ambulatory Care Services, Endoscopy Unit Manager/Coordinator or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of 'No Show' of Ambulatory Endoscopy cases
Rationale	This indicator was selected because: 1. This indicator reflects the quality of planning for Ambulatory Endoscopy services and measures the use of appropriate resources in the hospital for Ambulatory Procedures. 2. Cases for Ambulatory Endoscopy needs to be carefully selected and counselled on keeping their appointments as provided; for optimal use of resources and facilities that needs to be optimized so that needing cases are attended to in a timely manner. 3. Proper screening and selection of the patients with set criteria should be a prerequisite to select patients for Ambulatory Endoscopy services.
Definition of Terms	'No Show' for Ambulatory endoscopy Services: No Show for Ambulatory endoscopy Services refers to patients not turning up for the Endoscopy procedure appointment although already being listed for any given time and date for the procedure without any prior notification.
Inclusion and Exclusion Criteria	Inclusion Criteria: All Ambulatory Endoscopy cases registered and scheduled for the procedure on the specific day within the Ambulatory Care Unit for the study period Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	Numerator/Denominator x 100
Numerator	Number of Ambulatory Endoscopy cases registered and scheduled for Endoscopic procedure but did not turn up ('No Show') without notification for the procedure during the study period
Denominator	Total Number of Ambulatory Endoscopy cases registered and scheduled for endoscopy procedures during the study period X 100%
Target	< 2%
Data Collection Frequency	Three-monthly

Field	Indicator
Tracer Methodology	Cross-verification of patient appointment logs, attendance records, and endoscopy scheduling systems. Interviews with scheduling personnel to review appointment reminder and follow-up processes.
Person In charge (PIC)	Head of Ambulatory Care Services, Endoscopy Unit Manager/Coordinator or any other related appointed person.

12B

**Service
Standard 12B:
Ambulatory
Care Services –
Ophthalmology
Services**

**MSQH 7th Edition
Performance Indicator**

Service Standard 12B: Ambulatory Care Services -Ophthalmology Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of patients developed infectious endophthalmitis following cataract surgery	< 0.2 % (2 cases per 1000 operations)	Six-monthly
02	Percentage of patients with post - operative visual acuity of 6/12 or better within 3 months following cataract surgery and refractive procedure in patients without pre-existing ocular co-morbidity	> 90 %	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator title	Percentage of patients developed infectious endophthalmitis following cataract surgery
Rationale	This indicator was selected because: 1. Infectious Endophthalmitis is a rare but devastating complication after cataract surgery which may lead to permanent blindness. Morbidity associated with post-operative Infectious Endophthalmitis can be substantial and is related not only to acute process but also to late sequelae. 2. The causes can be multifactorial from patient to surgical environmental factors (contamination of sterilized instruments, disposable supplies, theatre environment, etc. 3. Monitoring of this KPI is mandatory to ensure safety of the service.
Definition of Terms	Infectious Endophthalmitis: Infection involving both the anterior and posterior segments of the eye after cataract surgery. A patient post cataract can develop Infectious Endophthalmitis any time after the cataract surgery.
Inclusion and Exclusion Criteria	Inclusion Criteria: All elective cataract surgeries Exclusion Criteria: All emergency and semi-emergency cataract surgeries.
Indicator Type	Rate Based Outcome Indicator
Formula	(Number of patients developed Infectious Endophthalmitis following cataract surgery during the specified period / Total number of patients underwent cataract surgery during the specified period) x 100
Numerator	Number of patients developed Infectious Endophthalmitis following cataract surgery during the specified period
Denominator	Total number of patients underwent cataract surgery during the specified period
Target	< 0.2 % (2 cases per 1000 operations)
Data Collection Frequency	Six-monthly
Tracer Methodology	Review of medical records of patients who developed Infectious Endophthalmitis following cataract surgery; audit of pre-operative, intra-operative and post-operative documentation; verification of

Field	Indicator
	surgical safety checklist compliance; review of instrument sterilisation and theatre environment records; evaluation of clinical management and follow-up documentation.
Person In charge (PIC)	Ophthalmology Head of Department, Specialists, Medical Officers, Staff Nurses or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of patients with post - operative visual acuity of 6/12 or better within 3 months following cataract surgery and refractive procedure in patients without pre-existing ocular co-morbidity
Rationale	This indicator was selected because: 1. Cataract is a preventable blindness. 2. Cataract surgery is indicated to improve the quality of life. Therefore, by measuring this indicator, we can monitor the quality of service given.
Definition of Terms	Pre-existing ocular comorbidities: 1. Diabetic Maculopathy. 2. Advanced Diabetic Eye Disease. 3. Macula Scar from any cause. 4. Amblyopia. 5. Optic neuropathy from any cause. 6. Cornea opacities from any cause.
Inclusion and Exclusion Criteria	Inclusion Criteria: All elective cataract surgeries Exclusion Criteria: 1. Patients with pre-existing ocular co-morbidity that will affect visual outcome. 2. All emergency and semi-emergency cataract surgeries.
Indicator Type	Rate Based Outcome Indicator
Formula	(Number of patients without pre-existing ocular co-morbidity obtained visual acuity 6/12 or better within 3 months following cataract surgery / Total number of patients without pre-existing ocular co-morbidity underwent cataract surgery) x 100
Numerator	Number of patients without pre-existing ocular co-morbidity obtained visual acuity 6/12 or better within 3 months following cataract surgery
Denominator	Total number of patients without pre-existing ocular co-morbidity underwent cataract surgery
Target	> 90 %

Field	Indicator
Data Collection Frequency	Six-monthly
Tracer Methodology	Review of medical records and post-operative follow-up documentation of patients who underwent elective cataract surgery; audit of pre-operative ocular co-morbidity screening and exclusion criteria compliance; verification of visual acuity assessment records at 3-month post-operative review; evaluation of surgical and clinical documentation completeness.
Person In charge (PIC)	Ophthalmology Head of Department, Specialists, Medical Officers, Staff Nurses, Data Personnel, any other related appointed person

13

Service Standard 13: Critical Care Services (ICU/CCU/CIC U/CRW/HDU/ Burns Care Unit)

**MSQH 7th Edition
Performance Indicator
Manual**

**Service Standard 13: Critical Care Services (ICU/CCU/CICU/CRW/HDU/Burns
Care Unit)**
Performance Indicator Summary

There is tracking and trending of specific performance indicators which include but not limited to at least five (5) of the following:

PI No	Indicator	Target	Reporting Frequency
01	Rate of pressure ulcers	<3%	Monthly
02	Rate of unplanned extubation	< 5%	Monthly
03	Rate of ventilator-associated pneumonia (VAP)	Less than 10 cases per 1000 ventilator days.	Monthly
04	Rate of catheter-related bloodstream infection	Less than 5 cases per 1000 catheter days.	Monthly
05	Compliance rate to hand hygiene	>85%	Monthly
06	For Level 2 & 3 care, standardized mortality ration and benchmarking with other units		Yearly

Performance Indicator 01

Field	Indicator
Indicator title	Rate of Pressure Ulcers
Rationale	This indicator was selected because: 1. Pressure ulcers/sores result in patient discomfort, increased length of stay, morbidity and mortality 2. 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 and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator x 100
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
Denominator	Total number of patients admitted to the critical care unit during the month
Target	< 3 %
Data Collection Frequency	Monthly
Tracer Methodology	Direct patient observation, review of nursing documentation and wound care logs, and examination of admission and discharge summaries. Random audits of pressure area risk assessments and preventive care documentation.

Field	Indicator
Person In charge (PIC)	Head Nurse, Critical Care Unit Manager, Wound Care Nurse or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	Rate of unplanned extubation
Rationale	This indicator was selected because: 1. Unplanned extubation in the critical care unit is associated with increased risk of re-intubation, aspiration pneumonia and ventilator associated pneumonia. 2. 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 and Exclusion Criteria	Inclusion Criteria: All patients who are on invasive ventilator Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator x 100
Numerator	Number of unplanned extubation in the Critical Care Unit
Denominator	Total number of patients invasively ventilated in the Critical Care Unit
Target	< 5 %
Data Collection Frequency	Monthly
Tracer Methodology	Review of incident reports, ventilator logbooks, and clinical progress notes. Cross-audit with patient monitoring charts and verification through interviews with staff responsible for airway management.
Person In charge (PIC)	Head of Critical Care Unit, Respiratory Therapist Leader, ICU Nurse Manager or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	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: 1. Head of bed elevation > 30 degrees 2. Use of stress ulcer prophylaxis 3. Use of deep vein thrombosis prophylaxis 4. 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 and Exclusion Criteria	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.
Indicator Type	Rate Based Output Indicator
Formula	Numerator / Denominator x 100
Numerator	Number of patients who developed ventilator associated pneumonia in the Critical Care Unit in the month
Denominator	Total number of patient ventilated days in the month
Target	< 10 per 1000 ventilator days
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review of infection surveillance records, ventilator utilisation data, radiological findings, and microbiological test results. Verification against clinical progress notes to confirm diagnosis and onset timing.
Person In charge (PIC)	ICU Physician in Charge, Infection Control Team Lead or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator title	Rate of Catheter Related Blood Stream Infection
Rationale	This indicator was selected because: 1. 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: i. Hand hygiene ii. Maximal barrier precautions upon insertion iii. Chlorhexidine skin antisepsis iv. Optimal catheter site selection, with subclavian vein as the preferred site of non-tunnelled catheters v. Daily review of line necessity with prompt removal of unnecessary lines 2. 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 bacteraemia/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 organisms 4. There is no apparent source for the bloodstream infection except the catheter
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients with central venous catheter/s in the critical care unit Exclusion Criteria: NA
Indicator Type	Rate Based Output Indicator
Formula	Numerator / Denominator x 100
Numerator	Number of patients who developed catheter-related blood stream infection
Denominator	Total number of patients - days with central venous catheter/s in the critical care unit

Field	Indicator
Target	< 5 per 1000 catheter days
Data Collection Frequency	: Monthly
Tracer Methodology	Review of infection surveillance data, microbiology and blood culture reports, and daily central line usage logs. Cross-verification with nursing documentation and infection control audit findings.
Person In charge (PIC)	ICU Physician, Infection Control Officer, Central Line Surveillance Nurse or any other related appointed person.

Performance Indicator 05

Field	Indicator
Indicator title	Compliance rate to hand hygiene
Rationale	This indicator was selected because: 1. Healthcare Associated Infection (HAI) is a significant problem in hospitals and has an impact on the safety of patient, staff and visitor. 2. 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" 3. 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	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). 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. 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 and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator x 100

Field	Indicator
Numerator	Number of hand hygiene actions performed
Denominator	Number of opportunities observed
Target	> 85%
Data Collection Frequency	Monthly
Tracer Methodology	Observational audits using standardised hand hygiene audit tools. Verification of findings through infection control reports and available real-time monitoring systems.
Person In charge (PIC)	Infection Control Officer, Critical Care Unit Manager, Hand Hygiene Link Nurse or any other related appointed person.

Performance Indicator 06

Field	Indicator
Indicator Title	For Level 2 & 3 Care, Standardized Mortality Ratio and Benchmarking with Other Units
Rationale	This indicator was selected because: 1. 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. 2. SMR also allows benchmarking with other units so as to improve product and service quality.
Definition of Terms	Standardized Mortality Ratio (SMR): 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. Simplified Acute Physiology Score (SAPS II) or Acute Physiology and Chronic Health Evaluation (APACHE II). 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
Indicator Type	Process-based indicator
Formula	
Numerator	
Denominator	
Target	

Field	Indicator
Data Collection Frequency	Yearly
Tracer Methodology	Review of critical care unit mortality data and severity scoring records. All patients must be scored within 24 hours of admission using SAPS II or APACHE II. Auditor to verify that SMR calculation has been completed, documented, and benchmarked against other units for the reporting year.
Person In charge (PIC)	Head of Critical Care Unit / Intensivist / Head of ICU/CCU/CICU/CRW/HDU/Burns Care Unit or any other related appointed person.

13A

**Service
Standard 13A
Critical Care
Services
(SCN/NICU/PI
CU/PHDW)**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 13A: Critical Care Services (SCN/NICU/PICU/PHDW) Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Rate of Central Line-Associated Bloodstream Infection (CRBSI)	<5 per 1,000 central line days	Monthly
02	Rate of Ventilator Associated Pneumonia (VAP)	<15% per 1,000 ventilator days	Monthly
03	Percentage of Survival of All Livebirths with Birthweight Between 1000–1499 g	>85%	Six-monthly
04	Percentage of Mortality and Morbidity Audits/Meetings Being Conducted in the Department with Documentation of Cases Discussed	≥ 30%	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator title	Rate of central line associated blood stream Infection (CRBSI)
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: 1. Hand hygiene 2. Maximal barrier precautions upon insertion 3. Chlorhexidine skin antisepsis 4. Optimal catheter site selection, with subclavian vein as the preferred site of non-tunnelled catheters 5. Daily review of line necessity with prompt removal of unnecessary lines This indicator measures patient safety and quality of care. Refer to: Policies and Procedures on Infection Prevention and Control 2019
Definition of Terms	Catheter Related Blood Stream Infection (CRBSI): CRBSI is defined as bacteraemia/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 organisms 4. There is no apparent source for the bloodstream infection except the catheter Method of calculating CRBSI: $\text{No of episodes CRBSI} / \text{No of catheter days} \times 1000 \text{ catheter days} = \%$
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients with central venous catheter/s in the critical care unit (SCN/NICU/PICU/PHDW) Exclusion Criteria: NA
Indicator Type	Rate Based Output Indicator
Formula	Numerator / Denominator x 100

Field	Indicator
Numerator	Number of paediatric patients that developed catheter - related blood stream infection
Denominator	Total number of paediatric patients with central venous catheter/s in the NICU/PICU
Target	< 5% per 1000 catheter days
Data Collection Frequency	Monthly
Tracer Methodology	Review of infection control surveillance logs and microbiology reports. Verification of central line presence at the time of infection onset. Exclusion of secondary bloodstream infections linked to non-line sources.
Person In charge (PIC)	Critical Care Head of Department, Paediatric Specialists, Medical Officers, Staff Nurses, Infection Control Team, Data Personnel, any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator title	Rate of Ventilator Associated Pneumonia
Rationale	This indicator was selected because: 1. 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. 2. 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. Method of calculating VAP: Total patient with VAP/No of ventilator days X 1000 ventilator days = %
Inclusion and Exclusion Criteria	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
Indicator Type	Rate Based Output Indicator
Formula	Numerator / Denominator x 100
Numerator	Number of patients who developed ventilator associated pneumonia in the Critical Care Unit (SCN/NICU/PICU/PHDW) in the month
Denominator	Total number of patient ventilated days in the critical care unit (SCN/NICU/PICU/PHDW) in the month
Target	< 15% per 1000 ventilator days
Data Collection Frequency	Monthly
Tracer Methodology	Review of respiratory care logs, chest imaging reports, and microbiology results. Verification that each ventilator-associated pneumonia episode meets predefined diagnostic criteria and occurred after at least 48 hours of mechanical ventilation.

Field	Indicator
Person In charge (PIC)	Critical Care Head of Department, Paediatric Specialists, Medical Officers, Staff Nurses, Infection Control Team, Data Personnel, any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of Survival of All Livebirths with Birthweight between 1000–1499g
Rationale	3. This group of infants comprises a significant proportion of patients who utilize NICU and special care nursery resources. 4. Their survival impacts significantly on the under 5 survival targets.
Definition of Terms	Livebirth: Born alive. Survival: Alive at discharge. Discharge: Alive/dead/transferred out. BBA (Born Before Arrival): Babies who are born alive outside the hospital.
Inclusion Criteria	Inclusion Criteria: All livebirth infants born in the hospital/referred to the hospital with birthweight between 1000–1499g. Exclusion Criteria: 3. Babies born with major/lethal congenital anomalies (LCM). 4. Born before arrival (BBA).
Indicator Type	Rate-based outcome indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of livebirths with birthweight between 1000–1499g who are alive at discharge
Denominator	Total number of livebirths with birthweight between 1000–1499g who are discharged
Target	≥ 85%
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Data to be collected in the Paediatric Neonatology Unit/PICU/PHDW/GICU/other related area. Data suggested to be collected from patient's case notes and daily census. Officer/Paramedic/Nurse in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Paediatric Department / Neonatologist / Medical Officer/Paramedic/Nurse in-charge of department/unit / or any other related appointed person.

Performance Indicator 04

Field	Indicator
Full Title	Percentage 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. (e.g.: 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 and Exclusion Criteria	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 (declared disaster activation).
Indicator Type	Rate Indicator – Clinical Governance Compliance
Formula	$\frac{\text{(Number of mortality/morbidity cases discussed in M\&M meetings in six-monthly)}}{\text{Total number of mortality/morbidity cases in the same six-month}} \times 100$
Numerator	Number of mortality/morbidity cases discussed and documented in M&M meetings within the reporting year
Denominator	Total number of mortality/morbidity cases recorded in the hospital within the same reporting year

Field	Indicator
Target	≥ 30%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review signed minutes, case summaries, attendance lists, and QI logs; verify HOD certification; assess whether learning points were disseminated to all staff within the department as part of the audit cycle.
Person In charge (PIC)	Head of Department/Quality Manager or any other related appointed person.

13B

**Service
Standard 13B:
Critical Care
Services –
Labour
Delivery
Services**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 13B: Critical Care Services – Labour Delivery Services

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of Massive Primary Post-Partum Haemorrhage Incidence in Hospital Deliveries (Excluding Placenta Previa and Adherence Placenta)	<1%	Monthly
02	Complication Rate from Instrumental or Vaginal Deliveries: Incidence of Third- and Fourth-Degree Tears	<10%	Monthly
03	Maternal Mortality	Zero maternal deaths	Monthly
04	Perinatal Mortality	Total numbers	Monthly

Performance Indicator 01

Field	Indicator
Indicator title	Percentage of massive Primary Post-Partum Haemorrhage (PPH) incidence in cases delivered in the hospital (exclusion criteria: placenta previa and adherent placenta)
Rationale	This is an indicator of the quality of obstetric care because: 1. The incidence of massive obstetric haemorrhage is reflective of the effectiveness of the management of haemorrhage at delivery. Post-partum haemorrhage (PPH) occurs in 3-5% of pregnant mothers and is still the leading cause of maternal death in Malaysia. 2. 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 and Exclusion Criteria	Inclusion Criteria: All deliveries within the facility - Both vaginal and abdominal routes. Exclusion Criteria: 1. Adherent Placenta (e.g. Accreta/ Increta/ Percreta). 2. Placenta Previa. 3. Abruptio Placenta. 4. Patients delivered outside of the facility.
Indicator Type	Rate Based Outcome Indicator
Formula	(Number of patients with massive Primary Post-Partum Haemorrhage (PPH) in the hospital / Total number of deliveries (all modes of delivery) in the hospital) x 100
Numerator	Number of patients with massive Primary Post-Partum Haemorrhage (PPH) in the hospital
Denominator	Total number of deliveries (all modes of delivery) in the hospital
Target	< 1 %
Data Collection Frequency	Monthly
Tracer Methodology	Audit of delivery records, operative notes, and post-partum haemorrhage management documentation. Validation of estimated

Field	Indicator
	blood loss, confirmation of exclusion criteria, and review of emergency response actions taken.
Person In charge (PIC)	Obstetrics and Gynaecology Head of Department, Specialists, Medical Officers, Staff Nurses, Midwives, or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator title	Complication rate from instrumental/vaginal deliveries: Incidence of third- and fourth-degree tears
Rationale	This indicator was selected because: 1. 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. 2. 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	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. 3rd and 4th degree perineal tear: Refers to incidence of Perineal Laceration /tear following vaginal delivery. Complications of instrumental deliveries: 1. Ventouse (Vacuum): <u>Maternal</u>: Vaginal laceration due to entrapment of vaginal mucosa between suction cup and foetal head <u>Foetal Complications</u>: scalp injuries, cephalohaematoma, intracranial haemorrhage, subgaleal haemorrhage, birth asphyxia, retina haemorrhage neonatal jaundice 2. Forceps: <u>Maternal</u>: Trauma to soft tissue, bleeding from laceration, trauma to urethra and bladder-fistula, pain <u>Foetal</u>: 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 and Exclusion Criteria	Inclusion Criteria: Patients who underwent vaginal deliveries in the hospital: 1. With instrumentation/without instrumentation 2. Sustained third (3rd) degree and fourth (4th) degree perineal laceration/tear 3. Complications from instrumental delivery i.e. cephalohaematoma, intracranial haemorrhage etc

Field	Indicator
	Exclusion Criteria: Patients who delivered outside of the hospital
Indicator Type	Rate Based Process Indicator
Formula	(Total number of patients with complications from instrumental /vaginal deliveries / Total number of instrumental/vaginal deliveries)
Numerator	Total number of patients with complications from instrumental /vaginal deliveries
Denominator	Total number of instrumental/vaginal deliveries
Target	< 10%
Data Collection Frequency	Monthly
Tracer Methodology	Audit of delivery records, perineal tear classification notes, and episiotomy documentation. Verification of tear severity and correlation with delivery method recorded in obstetric notes.
Person In charge (PIC)	Obstetrics and Gynaecology Head of Department, Specialists, Medical Officers, Staff Nurses, Midwives, or any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator title	Maternal Mortality
Rationale	This indicator was selected because: 1. This indicator reflects maternal health and enables safety considerations in reducing maternal mortality 2. 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 and Exclusion Criteria	Inclusion Criteria: All direct and indirect maternal deaths Exclusion Criteria: Patients who delivered outside of the Fatalities during but unrelated to a pregnancy are termed fortuitous maternal deaths.
Indicator Type	Sentinel Event
Formula	$\left(\frac{\text{Total number of Maternal Deaths}}{\text{Total number of Live Births}} \right) \times 1000$

Field	Indicator
Numerator	Total number of Maternal Deaths
Denominator	Total number of Live Births
Target	Sentinel Event <i>Remarks: Maternal Mortality Rate is expressed as per 100000 live births.</i>
Data Collection Frequency	Monthly
Tracer Methodology	Verification of deaths through structured death review processes, clinical documentation, and coding records. Cross-checking against delivery registers, discharge logs, and postnatal follow-up records.
Person In charge (PIC)	Obstetrics and Gynaecology Head of Department, Specialists, Medical Officers, Staff Nurses, Midwives, or any other related appointed person

Performance Indicator 04

Field	Indicator
Indicator title	Perinatal Mortality
Rationale	This indicator was selected because: 1. This indicator reflects maternal health and perinatal care of mothers and enables safety considerations in reducing perinatal mortality. 2. This indicator was selected to ensure good care to the mother and baby during delivery. 3. Pre-term births and multiple pregnancies, and birth defects are the most common causes of perinatal mortality besides respiratory distress syndrome, birth defects and toxemia in pregnancy. Hence safe prenatal care and monitoring of pregnant mothers as well as skilled and trained medical staff including midwives, paediatricians and the availability of facilities for managing complicated cases are important factors in reducing perinatal mortality.
Definition of Terms	Perinatal Mortality: Perinatal mortality is defined as the number of foetal deaths pass 22 or 28 completed weeks of pregnancy plus the number of deaths among live born babies up to 7 completed days of life, per 1000 total births (live births and still births).
Inclusion and Exclusion Criteria	Inclusion Criteria: All perinatal deaths occurring among foetus/livebirths who had been delivered in the hospital Exclusion Criteria: All perinatal deaths occurring among births occurring outside the hospital
Indicator Type	Quality Indicator
Formula	Numerator / Denominator
Numerator	Total number of foetal deaths pass 22 weeks-28 completed weeks of pregnancy plus deaths among live births up to 7 completed days of life.
Denominator	-
Target	Total numbers
Data Collection Frequency	Monthly
Tracer Methodology	Review of delivery registers, stillbirth documentation, and neonatal mortality records. Verification of gestational age and linkage to structured case review or root cause analysis documentation.

Field	Indicator
Person In charge (PIC)	Obstetrics and Gynaecology Head of Department, Paediatric Specialists, Medical Officers, Staff Nurses, Midwives, or any other related appointed person

14

Service Standard 14: Radiology Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 14: Radiology Services Performance Indicator Summary

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

Field	Indicator	Target	Reporting Frequency
Facility with Radiologist			
01	Percentage of Reject/Retake Images of Plain Radiographs	<5%	Monthly
02	Percentage of Reject/Retake of Mammogram Images	<3%	Monthly
03	Percentage of Radiological Examination Errors – Wrong Marker, Wrong Site, Wrong Patient		Monthly
04	Complication Rate for Post Interventional Procedures		Monthly
05	Perfect, Good, Moderate, Inadequate (PGMI) Audit for Mammography	≥97% of images rated Perfect, Good, or Moderate	Monthly
06	Percentage of Patients with Significant Pneumothorax or Haemorrhage Requiring Intervention Following Percutaneous Interventional Procedures (Thorax, Abdomen, Pelvis)	≤10%	Monthly
07	Percentage of Patients with Waiting Time of ≤60 Minutes for Commencement of Ultrasound Examination	>90%	Monthly
08	Turnaround Time of ≤2 Working Days for Final Report of Special Radiological Examination Done on Inpatients	≥97%	Monthly

Field	Indicator	Target	Reporting Frequency
Facility with Radiologist			
09	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 Computed Tomography (CT) Examination with Intravenous (IV) Contrast Media	<1%	Monthly
Facility without Radiologist			
11	Percentage of accurate interpretation of x-rays films by medical officers as reported by radiologist		Monthly
12	Percentage of Reject-Retake Images of Plain Radiographs	≤ 5%	Monthly
13	Percentage of radiographic errors, i.e. wrong marker, use of primary markers, wrong site x-rayed, wrong patient x-rayed	< 5%	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of Reject-Retake Images of Plain Radiographs
Rationale	1. This indicator is a reflection of many of the processes carried out in an imaging department. 2. This indicator has great relevance as it reflects on almost all the processes in the department namely radiographic techniques, performance of X-ray machines, film/image processing and storage of films. 3. Internationally, the percentage of reject-retake images is quoted to be around 4–11% in average.
Definition of Terms	Radiographs: Films produced using conventional (non-digital) system. Radiographic images: Images acquired using digital (DR/CR) system. Rejected images: Any radiographs or images acquired during radiographic examinations/radiological procedures that has no diagnostic value and has to be repeated/retake. This includes: 1. Rejects recorded by the machine. 2. Rejects confirmed through the Reject Analysis meeting (suggested to be held monthly within Department). Image retake: Repeat exposure to the patient due to earlier non-diagnostic image or rejected by the radiographers/radiologist.
Inclusion and Exclusion Criteria	Inclusion Criteria: All radiographs/radiographic images done in the facility including mobile X-rays. Exclusion Criteria: 1. Images discarded due to testing purposes. 2. Images used for quality assurance procedures.
Indicator Type	Rate-based process indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of rejected radiographs/radiographic images
Denominator	Total number of radiographs/radiographic images made

Field	Indicator
Target	≤ 5%
Data Collection Frequency	Monthly
Tracer Methodology	Data to be collected in the Radiology Department/Unit. Data suggested to be collected from radiographs/radiographic images record book. Officer/Paramedic/Radiographer in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Radiology Department / Radiologist / Radiographer in-charge / Head of Quality Unit / Hospital Director / or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of reject/retake mammogram images
Rationale	This indicator was selected because: 1. This indicator is a reflection of many of the processes carried out in an imaging department. 2. This indicator has great relevance as it reflects on almost all the processes in the department namely radiographic techniques, performance of X-ray machines, film/ image processing and storage of films. 3. Internationally, the percentage of reject-retake images is quoted to be around 4-11% in average. This indicator was selected as an indicator to assess the appropriate use of special equipment and conduct of radiological examinations such as mammogram as they have an impact on the cost of radiographic techniques and time spent when there are rejects retakes.
Definition of Terms	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 Radiographic images: Images acquired using digital (DR/ CR) system. Rejected images: Any radiographs or images acquired during radiographic examinations/ radiological procedures that has no diagnostic value and has to be repeated/ retake. This refers to radiographs or images of patients that are assessed by the radiographer or the requesting clinician/ radiologist to be clinically unacceptable. Image retake: Repeat exposure to the patient due to earlier non-diagnostic image or rejected by the radiologists and clinicians.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All mammogram images done in the facility 2. All mammogram images rejected by radiographers, radiologist and clinicians. Exclusion Criteria: 1. Images discarded due to testing purposes. 2. Images used for quality assurance procedures

Field	Indicator
Indicator Type	Rate Based Process Indicator
Formula	$\text{Numerator} / \text{Denominator} \times 100\%$
Numerator	Total number of numbers of rejected mammogram images
Denominator	Total number of mammogram images made in the same period
Target	< 3%
Data Collection Frequency	Monthly
Tracer Methodology	Audit of randomly selected rejected or retaken mammogram images. Review of image rejection logs against documented reasons for rejection. Verification of repeat exposure records within imaging information and archiving systems.
Person In charge (PIC)	Lead Radiographer in the Mammography Unit or Radiologist overseeing Breast Imaging Services or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	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: 1. There is a need for adequate quality control in performing Radiological examinations to ensure the effectiveness of the Radiological Services. 2. 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 and Exclusion Criteria	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
Indicator Type	Rate Based Output Indicator
Formula	$\text{Numerator} / \text{Denominator} \times 100\%$
Numerator	Total number of radiological examinations that had to be repeated due to wrong part, wrong view, wrong site or wrong patient X-rayed
Denominator	Total number of radiological examinations/imaging done in the same period
Target	-

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review of imaging information system records flagged as repeated examinations. Cross-check repeated cases against imaging request forms to determine error type and cause. Verification against incident reporting systems for near-miss or sentinel event classification.
Person In charge (PIC)	Head of Imaging Services or or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator title	Complication rate for post interventional procedures
Rationale	This indicator was selected because: 1. 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. 2. This indicator addresses the safety of the process of diagnostic procedures in patient management.
Definition of Terms	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. 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 and Exclusion Criteria	Inclusion Criteria: All patients undergoing interventional radiological procedures Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	$\text{Numerator} / \text{Denominator} \times 100\%$
Numerator	Number of patients with post procedural complications following interventional radiological procedures
Denominator	Total number of patients radiological procedures
Target	-
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review procedural logs for all interventional cases. Confirm documented complications against post-procedure imaging findings or clinical records. Verify complication definitions, such as requirement for chest tube insertion or fluid resuscitation.
Person In charge (PIC)	Interventional Radiologist/Head of Radiology Department or any other related appointed person.

Performance Indicator 05

Field	Indicator
Indicator title	Perfect, Good, mammography Moderate, Inadequate (PGMI) audits for mammography
Rationale	This indicator was selected because: 1. Mammography remains the most effective screening tool in comparison to clinical breast examination and breast self-examination. 2. 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. 3. Image classification in relation to PGMI system maximizes high quality of images and minimizes technical repeats.
Definition of Terms	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 and Exclusion Criteria	Inclusion Criteria: All mammogram images for breast screening taken in the month Exclusion Criteria: NA
Indicator Type	Audit on Quality of Mammogram images
Formula	$\text{Numerator} / \text{Denominator} \times 100\%$
Numerator	Number of mammogram images with PGM results
Denominator	Total number of mammogram images taken in the month
Target	≥ 97% for Perfect, Good & Moderate

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Randomly select 30 mammogram cases each month. Classify images using the PGMI system. Ensure audits are conducted by two trained assessors, with disagreements resolved through a third assessor.
Person In charge (PIC)	Lead Radiographer in the Mammography Unit or Radiologist overseeing Breast Imaging Services or any other related appointed person.

Performance Indicator 06

Field	Indicator
Indicator title	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: 1. 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	Pneumothorax: Defined as the presence of air in FIRST post-procedural chest imaging. The first postprocedural chest imaging is defined as occurring from 0-4 hours after the procedure. Significant pneumothorax: One that requires chest tube insertion. 3. Significant Haemorrhage: Defined as bleeding requiring fluid resuscitation within ($\leq$) 24 hours of the procedure. Percutaneous Interventional Procedures: Include the performance of biopsy of lung, mediastinum, pelvis or abdominal organs under image guidance.
Inclusion and Exclusion Criteria	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.
Indicator Type	Rate Based Outcome Indicator
Formula	Numerator / Denominator $\times$ 100%
Numerator	Number of patients with significant pneumothorax/haemorrhage requiring intervention following percutaneous interventional procedures in the thorax, abdomen and pelvis
Denominator	Total number of patients underwent percutaneous interventional procedures in the thorax, abdomen and pelvis
Target	$\leq 10\%$

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review post-procedure imaging for pneumothorax detection. Cross-check patient monitoring charts for fluid resuscitation or escalation of care. Validate findings against complication registries and sentinel event documentation.
Person In charge (PIC)	Consultant Interventional Radiologist/Interventional Radiologist or any other related appointed person.

Performance Indicator 07

Field	Indicator
Indicator title	Percentage of patients with waiting time of ≤60 minutes for commencement of ultrasound examination
Rationale	This indicator was selected because: 1. Waiting time for patient to undergo an ultrasound examination should be kept to a minimum. 2. 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 and Exclusion Criteria	Inclusion Criteria: All patients with scheduled appointments Exclusion Criteria: 1. Patients without prior appointments/unscheduled 2. Unprepared cases
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator × 100%
Numerator	Number of patients with waiting time of ≤ 60 minutes for commencement of ultrasound examination
Denominator	Total number of patients commenced ultrasound examination
Target	≥ 90%
Data Collection Frequency	Monthly
Tracer Methodology	Extract timestamp data from RIS or validated manual ultrasound registers. Match appointment or registration time against examination start time. Audit a random sample of at least 20 scheduled ultrasound cases monthly to verify data integrity.
Person In charge (PIC)	Radiology Floor Manager/Imaging Operations Officer or any other related appointed person.

Performance Indicator 08

Field	Indicator
Indicator title	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	Turnaround time: The time taken between completion of the examination to the availability of report (not including public holidays and weekend). Final Report: Reports that have been verified by a radiologist. Special Radiological Examinations: All contrast examinations, CT, MRI, Ultrasound, Mammograms and Angiograms
Inclusion and Exclusion Criteria	Inclusion Criteria: All special radiological examinations performed on inpatients Exclusion Criteria: Cases done when the resident radiologist is not available in the hospital
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator $\times 100\%$
Numerator	Number of special radiological examinations performed on inpatients reported within ($\leq$) 2 working days
Denominator	Total number of special performed on inpatients
Target	$\leq 97\%$
Data Collection Frequency	Monthly
Tracer Methodology	Cross-check modality logs with PACS report verification timestamps. Filter cases by inpatient status. Validate report sign-off time against scan completion time, excluding weekends and public holidays.
Person In charge (PIC)	Radiologist in Charge/ Radiology Floor Manager/Imaging Operations Officer or any other related appointed person.

Performance Indicator 09

Field	Indicator
Indicator title	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	Turnaround time: The time taken between completion of the examination to the availability of report (not including public holidays and weekend). Final Report: Reports that have been verified by a radiologist. Special Radiological Examinations: All contrast examinations, CT, MRI, Ultrasound, Mammograms and Angiograms
Inclusion and Exclusion Criteria	Inclusion Criteria: All special radiological examinations performed on out patients. Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator $\times 100\%$
Numerator	Number of special radiological examinations performed on inpatients reported within ($\leq$) 14 working days
Denominator	Total number of special performed on outpatients
Target	$\leq 90\%$
Data Collection Frequency	Monthly
Tracer Methodology	Match scan completion date from modality logs with report sign-off timestamp in PACS/RIS. Filter cases using outpatient status in HIS. Audit at least 25 randomly selected outpatient cases monthly across all imaging modalities.
Person In charge (PIC)	Radiologist in Charge/ Radiology Floor Manager/Imaging Operations Officer or any other related appointed person.

Performance Indicator 10

Field	Indicator
Indicator title	Percentage of patients developed significant contrast media extravasation following CT examination with intravenous (IV) contrast media
Rationale	This indicator was selected because: 1. CT with intravenous (IV) contrast media is a commonly performed procedure in the Department of Radiology. 2. Contrast extravasation is a known complication which occurs more frequently with power injection. It may also occur with hand injections. 3. 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. 4. Contrast media are known to induce significant tissue damage such as: a) Skin ulceration b) Soft tissue necrosis c) Compartment syndrome 5. The incidence of contrast media extravasation should be kept to the minimum.
Definition of Terms	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 and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator × 100%

Field	Indicator
Numerator	Number of patients developed significant contrast media extravasation following CT examination with intravenous (IV) contrast media
Denominator	Total number of patients undergo CT examination with intravenous (IV) contrast media
Target	< 1%
Data Collection Frequency	Monthly
Tracer Methodology	Review CT contrast administration logs and incident reporting records. Verify events against injection monitoring sheets and radiology information system records. Validate all identified cases with documented clinical referrals and follow-up notes.
Person In charge (PIC)	Radiologist in Charge/ Radiology Floor Manager/Imaging Operations Officer or any other related appointed person.

Performance Indicator 11 – Facility without Radiologist

Field	Indicator
Indicator title	Percentage of accurate interpretation of x-rays films by medical officers as reported by radiologist
Rationale	This indicator was selected because: 1. 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. 2. 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 and Exclusion Criteria	Inclusion Criteria: All x-rays' films sent to the radiologist for reporting Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	$\text{Numerator} / \text{Denominator} \times 100\%$
Numerator	Number of radiological reports (for X- rays films sent for reporting) from the Radiologist that corresponds to the Medial Officers findings
Denominator	Total number of X-ray films sent to the Radiologist for reporting
Target	-
Data Collection Frequency	Monthly
Tracer Methodology	Randomly sample at least 30 X-ray cases per month. Compare documented preliminary interpretations by medical officers against the radiologist's final report. Classify outcomes as concordant, partially concordant, or significantly discrepant based on clinical relevance.

Field	Indicator
Person In charge (PIC)	Radiology Liaison Officer/Medical Imaging Coordinator or any other related appointed person.

Performance Indicator 12 – Facility without Radiologist

Field	Indicator
Indicator Title	Percentage of Reject-Retake Images of Plain Radiographs
Rationale	4. This indicator is a reflection of many of the processes carried out in an imaging department. 5. This indicator has great relevance as it reflects on almost all the processes in the department namely radiographic techniques, performance of X-ray machines, film/image processing and storage of films. 6. Internationally, the percentage of reject-retake images is quoted to be around 4–11% in average.
Definition of Terms	Radiographs: Films produced using conventional (non-digital) system. Radiographic images: Images acquired using digital (DR/CR) system. Rejected images: Any radiographs or images acquired during radiographic examinations/radiological procedures that has no diagnostic value and has to be repeated/retake. This includes: 1. Rejects recorded by the machine. 2. Rejects confirmed through the Reject Analysis meeting (suggested to be held monthly within Department). Image retake: Repeat exposure to the patient due to earlier non-diagnostic image or rejected by the radiographers/radiologist.
Inclusion and Exclusion Criteria	Inclusion Criteria: All radiographs/radiographic images done in the facility including mobile X-rays. Exclusion Criteria: 3. Images discarded due to testing purposes. 4. Images used for quality assurance procedures.
Indicator Type	Rate-based process indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of rejected radiographs/radiographic images
Denominator	Total number of radiographs/radiographic images made

Field	Indicator
Target	≤ 5%
Data Collection Frequency	Monthly
Tracer Methodology	Data to be collected in the Radiology Department/Unit. Data suggested to be collected from radiographs/radiographic images record book. Officer/Paramedic/Radiographer in-charge of the department/unit to collect data monthly.
Person In charge (PIC)	Head of Radiology Department / Medical officer / Radiographer in-charge or any other related appointed person.

Performance Indicator 13 – Facility without Radiologist

Field	Indicator
Indicator title	Percentage of radiographic errors, i.e. wrong marker, use of primary markers, wrong site x-rayed, wrong patient x-rayed
Rationale	This indicator was selected because: 1. There is a need for adequate quality control in performing Radiological examinations to ensure the effectiveness of the Radiological Services. 2. 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 and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	$\text{Numerator} / \text{Denominator} \times 100\%$
Numerator	Number of radiological examinations/ imaging that had to be repeated due to wrong part, wrong view, wrong site or wrong patient X-rayed
Denominator	Total number of radiological examinations/imaging done in the same period
Target	< 5%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review incident reporting forms and digital image annotations. Audit images for marker accuracy and anatomical side consistency. Cross-match findings against imaging system logs and patient registration records.
Person In charge (PIC)	Senior Radiographer/Imaging Risk Coordinator or any other related appointed person.

15

Service Standard 15: Pathology Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 15: Pathology Services Performance Indicator Summary

There is tracking and trending of specific performance indicators that covers the following:

PI No	Indicator	Target	Reporting Frequency
01	Timeliness of results of urgent requests	>95%	Monthly
02	Rejection Rate of Specimens	<1%	Monthly
03	Notification of Critical Laboratory Tests Results	>95%	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Timeliness of results of urgent requests
Rationale	This indicator was selected because: 1. One of the objectives of a medical laboratory is to provide timely laboratory results for the management of medical emergency to ensure timeliness of urgent requests 2. Timeliness of the services is the capability of the laboratory providing fast results 3. A fast laboratory turnaround time (LTAT) is desirable and is one of the indicators of efficient laboratory services • This indicator measures the clinical effectiveness of care and is expected to reflect the time taken for urgent and normal 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 are validated and dispatched or available in the system. This should be within the agreed target time and quality objective of the service for urgent requests. 2. Urgent Request: Refers to urgent requests for laboratory tests made for immediate management of patients or emergency cases
Inclusion and Exclusion Criteria	Inclusion Criteria: All requests made for laboratory tests and samples sent that are labelled as urgent. Exclusion Criteria: 1. Request for non- urgent laboratory tests 2. Request not for immediate management of patients 3. Laboratory tests done at POCT site
Indicator Type	Rate Based Process Indicator
Formula	$\left(\frac{\text{Number of urgent requests made for laboratory tests and complied to the timeliness of results for the corresponding period}}{\text{Total number of urgent requests made for laboratory tests for the corresponding period}} \right) \times 100\%$
Numerator	Number of urgent requests made for laboratory tests and complied to the timeliness of results for the corresponding period

Field	Indicator
Denominator	Total number of urgent requests made for laboratory tests for the corresponding period
Target	>95%
Data Collection Frequency	Monthly, at department level
Tracer Methodology	Trace urgent laboratory requests from laboratory information system (LIS) or request forms labelled as urgent. Record time of specimen receipt and time of result validation or availability in system. Calculate Laboratory Turnaround Time (LTAT) for each case. Compare against agreed target time for urgent requests. Verify compliance through laboratory logs, LIS timestamps, and result reporting records. Exclude non-urgent, non-immediate management requests, and POCT cases. Cross-check totals with laboratory workload records for the corresponding period.
PIC (Person In charge)	Laboratory Manager, Pathologist, Medical Laboratory Technologist, Staff Nurse, Data Collector or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator Title	Rejection Rate of Specimens
Rationale	This indicator was selected because: 1. 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. 2. This indicator and has great relevance as it reflect 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 and Exclusion Criteria	Inclusion Criteria: All testing done for in-patients and the testing is done within the same admission. Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	$(\text{Total number of specimens rejected} \div \text{Total number of specimens sent for testing in the same period}) \times 100\%$
Numerator	Total number of specimens rejected
Denominator	Total number of specimens sent for testing in the same period
Target	< 1%
Data Collection Frequency	Monthly, at department level
Tracer Methodology	Trace all specimens received in the laboratory within the same admission period using laboratory registers or laboratory information system (LIS). Identify and record specimens rejected based on laboratory rejection criteria. Verify reasons for rejection from rejection logs or incident records. Cross-check total specimens sent for testing against ward records and LIS entries. Ensure only in-patient samples within the same admission are included. Validate counts with daily laboratory workload reports.

Field	Indicator
PIC (Person In charge)	Laboratory Manager, Pathologist, Medical Laboratory Technologist, Staff Nurse, Phlebotomist, Data Collector or any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator Title	Notification of critical laboratory tests results
Rationale	This indicator was selected because: 1. 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 2. 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. 3. It is important to ensure timely critical result communication between the laboratory and the clinician for safe patient care. Reference: Technical Specifications Key Performance indicators (KPIs) Clinical Services, Medical Programme Version 4.0 2016.
Definition of Terms	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. 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. Result Verification: Means results analysed, confirmed and ready to be reported. Notification: Any mode of communication e.g. telephone, SMS. All communication must be documented. The notification is timely as agreed/stated in the service objectives of the laboratory.
Inclusion and Exclusion Criteria	Inclusion Criteria: All notification of critical results of laboratory tests done as per stated Reference Standards for the corresponding period including Point of Care Testing (POCT) Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	$(\text{Number of timely notifications of critical results for all laboratory tests done in the Facility including POCT results for the corresponding period} \div \text{Total number of laboratory tests done in the Facility including POCT for the corresponding period}) \times 100\%$

Field	Indicator
Numerator	Number of timely notifications of critical results for all laboratory tests done in the Facility including POCT results for the corresponding period
Denominator	Total number of laboratory tests done in the Facility including POCT for the corresponding period
Target	>95%
Data Collection Frequency	Monthly, at department level
Tracer Methodology	Trace all laboratory results flagged as critical from laboratory information system (LIS) including POCT records. Identify time of result verification and time of notification to the clinician. Verify documentation of communication (e.g. telephone logs, SMS records, critical value reporting forms). Assess whether notification was performed within the stipulated time (e.g. within 30 minutes). Cross-check with patient records and ward logs for confirmation of receipt. Ensure inclusion of all applicable laboratory and POCT results within the corresponding period. Validate totals against LIS reports and departmental records.
PIC (Person In charge)	Pathologist, Laboratory Manager, Medical Laboratory Technologist, Staff Nurse, POCT Coordinator, Data Collector, Quality Unit or any other related appointed person

16

Service Standard 16: Blood Transfusion Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 16: Blood Transfusion Services Performance Indicator Summary

There is tracking and trending of specific performance indicators of the following:

PI No	Indicator	Target	Reporting Frequency
01	Cross-Match Transfusion Ratio	≤2.0	Monthly
02	Expiry Rates of Different Blood Components	1. Red cell: ≤ 5% 2. Platelet concentrates: ≤ 15% 3. Apheresis (platelet or plasma): 0%	Monthly
03	Hemovigilance Reporting Compliance Rate to NHCC	≥80%	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Cross- Match Transfusion Ratio
Rationale	This indicator was selected because 1. 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. 2. 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. 3. 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	Cross- Match: A compatibility test carried out on patient's serum with donor red blood cells before blood is transfused. Transfusion: The infusion of crossed- matched whole blood or red blood cell concentrates to the patient. 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 and Exclusion Criteria	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.
Indicator Type	Rate Based Process Indicator
Formula	Number of red cell units cross - matched ÷ Number of red cell units transfused × 100%
Numerator	Number of red cell units cross - matched
Denominator	Number of red cell units transfused
Target	≤ 2.0%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Trace all blood requests and cross-matching records from blood bank registers and laboratory information system. Identify total number of red cell units cross-matched and total number of units transfused within the corresponding period. Verify matching between request forms, compatibility testing records, and transfusion documentation. Cross-check with ward transfusion records and patient case notes to confirm actual transfusion. Ensure exclusion of emergency uncross matched Group O blood cases. Validate totals with blood bank inventory and transfusion logs. Recalculate ratio and confirm consistency with reported data.
PIC (Person In charge)	Blood Bank Medical Officer, Pathologist, Transfusion Medicine Specialist, Medical Laboratory Technologist, Staff Nurse, Data Collector or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator Title	Expiry rates of different blood components: 1. Red cell: $\leq 5\%$ 2. Platelet concentrates: $\leq 15\%$ 3. Apheresis (platelet or plasma): 0%
Rationale	This indicator was selected because: 1. Utilization of donated blood can be fully optimized by preparing blood components from the collected whole blood. 2. This indicator reflects safety precautions and standards on the use of blood and blood products which can be life threatening when not administered appropriately. 3. This indicator reflects the increasing expectations of safety standards in the blood transfusion services
Definition of Terms	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 and Exclusion Criteria	Inclusion Criteria: All units of blood components prepared/kept in the blood bank Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	1. Red cell blood component: $\text{Number of expired units of red cell blood component} \div \text{Total number of units of red cell blood component prepared/available} \times 100\%$ 2. Platelet concentrates: $\text{Number of expired units of platelet concentrates blood component} \div \text{Total number of units of platelet blood component prepared/available} \times 100\%$ 3. Apheresis (platelet or plasma): $\text{Number of expired units of Apheresis (platelet or plasma)} \div \text{Total number of units of Apheresis (platelet or plasma) prepared/available} \times 100\%$
Numerator	1. Red cell blood component: Number of expired units of red cell blood component 2. Platelet concentrates: Number of expired units of platelet concentrates blood component 3. Apheresis (platelet or plasma) : Number of expired units of Apheresis (platelet or plasma)

Field	Indicator
Denominator	1. Red cell blood component: Total number of units of red cell blood component prepared/available 2. Platelet concentrates: Total number of units of platelet blood component prepared/available 3. Apheresis (platelet or plasma): Total number of units of Apheresis (platelet or plasma) prepared/available
Target	Red cell: $\leq 5\%$ Platelet concentrates: $\leq 15\%$ Apheresis (platelet or plasma): 0%
Data Collection Frequency	Monthly
Tracer Methodology	Trace inventory records of blood components in the blood bank including red cell, platelet concentrates and apheresis products. Identify total number of units prepared/available and number of expired units within the corresponding period. Verify expiry status using stock cards, inventory management system, and physical stock checks. Cross-check preparation logs, storage records and disposal documentation for expired units. Ensure categorisation of components is accurate (red cell, platelet concentrates, apheresis). Validate data consistency between stock balance reports and expiry records. Recalculate expiry rates and confirm alignment with reported indicators.
PIC (Person In charge)	Blood Bank Medical Officer, Pathologist, Transfusion Medicine Specialist, Medical Laboratory Technologist, Inventory/Store Personnel, Data Collector or any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator Title	Haemovigilance Reporting Compliance Rate to NHCC
Rationale	Haemovigilance reporting is mandated by the National Transfusion Medicine Policy, the Handbook on the Clinical Use of Blood and the Transfusion Practice Guidelines. These documents highlight haemovigilance as a critical component in enhancing patient safety, ensuring blood quality, and maintaining accountability across all transfusion-related activities.
Definition of Terms	Haemovigilance: Haemovigilance encompasses surveillance across the entire transfusion chain, from blood donation and processing to transfusion and patient follow-up. It involves monitoring, reporting, investigating, and analysing adverse events, with actions taken to prevent recurrence. Adverse event: Any undesirable or unintended occurrence associated with transfusion or donation. It includes all adverse reactions (donor and recipients), incidents, near misses, transfusion errors and seroconvert donor. Monthly haemovigilance report: Report on adverse events related to blood donors and recipients submitted to NHCC. NHCC: The National Haemovigilance Coordinating Centre is a section under Pusat Darah Negara, responsible for managing the National Haemovigilance Programme for Transfusion Medicine Service in Malaysia.
Inclusion and Exclusion Criteria	Inclusion: Hospital (with or without reported adverse event). Exclusion: Hospitals/Institution without transfusion services, e.g., Rajah Charles Brooke Memorial Hospital.
Indicator Type	Health (Clinical Outcome)
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100$
Numerator	Total number of monthly haemovigilance reports received by NHCC during the evaluation term
Denominator	Total number of expected monthly haemovigilance reports from hospitals during the evaluation term. (One report per hospital per month)
Target	≥80%
Data Collection Frequency	Monthly reporting to NHCC; within three (3) months for cases requiring further investigation.

Field	Indicator
Tracer Methodology	Data is collected from – (i) Reporting form for Transfusion Related Adverse events (BTS/HV/3/2016). (ii) Reporting form for Adverse Donor reaction (BTS/DV/2/2016). (iii) Reporting form for Seroconvert Donor Notification Part 1 and Part 2 (BTS/SC/1/2016). (iv) Haemovigilance Module BBISv2 v) Seroconvert Module BBISv2 • Full adverse events reports sent via BBISv2, email, or hardcopy to NHCC.
PIC – Person In charge	Collected by the Liaison Officer in the hospital's blood bank or any other related appointed person.

17

Service Standard 17: Rehabilitation Medicine Services

Service Standard 17: Rehabilitation Medicine Services

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of patients with waiting time of ≤ 90 minutes to see the doctor at the rehabilitation medicine outpatient clinic (only one registration area involved)	>90	Monthly
02	Percentage of patients with established interdisciplinary rehabilitation plan within ≤ 5 working days of admission	>90%	Monthly
03	Percentage of falls and near-falls in rehabilitation medicine outpatient clinic	<2%	Monthly
04	Percentage of inpatients with functional measure assessment upon admission and prior to cessation of patient rehabilitation programme	>90%	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of patients with waiting time of ≤ 90 minutes to see the doctor at the rehabilitation medicine outpatient clinic (only one registration area involved)
Rationale	This indicator was selected because: 1. MOH aims for waiting time to see the doctor at outpatient services, to be less than 90 minutes, in line with patient-centred services. Waiting time is time patient first registers in the hospital till the time patient is seen by doctor. 2. The waiting time is based on patient's experience from the time the patient first registers at the first counter in the hospital till seen by doctor. In view of many counters being involved in some hospitals/ departments, some clinical departments have opted for monitoring of registration from department counter, as any process prior to that appears out of the clinical department's control. Thus, due to involvement of 2 or more counters within the hospital, for monitoring of clinical services KPI, the target of waiting time is for less than 60 minutes within the department. This is applicable only if patient is being registered at another counter within the same hospital (e.g. at hospital's main outpatient/ ACC complex registration counter) prior to the clinical department counter. 3. For hospitals to eliminate or reduce waiting time, it is important to balance between the demand for appointments and the supply of appointments. One needs to identify opportunities for improvement by strengthening the policy of outpatient services in hospital, apply Queuing Theory and having contingency plans.
Definition of Terms	Waiting Time: Time of registration counter at department counter or time of appointment given to patient (whichever is later) till the time the patient is first seen by the doctor, which is beginning of a consultation.
Inclusion and Exclusion Criteria	Inclusion: All outpatients of Rehabilitation Medicine Outpatient Clinic. Exclusion: 1. Patients who come without an appointment ("walk-in" patients). 2. Patients that need to do procedures on the same day before seeing the doctors (e.g. blood taking or imaging).
Indicator Type	Rate-Based Process Indicator

Field	Indicator
Formula	Timely Consultation Rate (%) = (Number of patients seen within ≤90 minutes ÷ Total number of rehabilitation clinic patients seen) × 100
Numerator	Number of sampled patients with waiting time of ≤ 90 minutes to see the doctor at the Rehabilitation Medicine Outpatient Clinic
Denominator	Total sample of patients seen by the doctor at the Rehabilitation Medicine Outpatient Clinic
Target	> 90%
Data Collection Frequency	Monthly
Tracer Methodology	Review HIS and/or registration timestamps (registration vs consultation). Weekly random audits to identify patterns of prolonged waiting. Document delays and correlate with clinician availability logs.
PIC – Person In charge	Clinic Manager/Rehabilitation Medicine Coordinator or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of patients with established interdisciplinary rehabilitation plan within ≤5 working days of admission
Rationale	This indicator was selected because: 1. 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. 2. 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 and Exclusion Criteria	Inclusion: All referral/admission for inpatient rehabilitation care. Exclusion: All inpatients for rehabilitation care with length of stay of less than Seven working days of admission.
Indicator Type	Rate Based Process Indicator
Formula	Timely Rehab Plan Establishment Rate (%) = (Number of patients with plan established within five [5] working days ÷ Total eligible rehabilitation inpatients) × 100
Numerator	Number of rehabilitation inpatients with an established interdisciplinary plan within ≤5 working days of admission.
Denominator	Total number of rehabilitation inpatients admitted during the reporting period (excluding early discharges/transfers).
Target	>90%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Audit patient case notes for documented team plan. Confirm plan date relative to admission. Match team signatures or entries in designated rehabilitation planning form.
PIC – Person In charge	Rehabilitation Case Coordinator/Rehabilitation Medicine Consultant or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of falls and near-falls in rehabilitation medicine outpatient clinic
Rationale	To ensure patients' safety starting from the registration in clinic until completion of the clinic session as falls/ near-falls are preventable and has multifactorial cause which includes intrinsic and modifiable extrinsic factor.
Definition of Terms	Fall: An event that result in a person coming to rest in advertently on the ground or floor or other lower level, with or without injury Near-fall: A slip, trip, stumble or loss of balance such that the individual starts to fall but either able to recover (witnessed or unwitnessed) and remains upright because their balance recovery mechanisms were activated and/or caught by staff/other persons, or they were eased to the ground or floor or other lower level, by staff/other persons (e.g. could not stop or prevent falling to the ground, floor or lower surface).
Inclusion and Exclusion Criteria	Inclusion: Patient who experience fall and near-fall in the Rehabilitation Medicine Specialist Clinic area from the time of registration at the clinic until completion of the clinic session. Exclusion: NA
Indicator Type	Rate Based Outcome Indicator
Formula	Clinic Fall and Near-Fall Rate (%) = (Number of outpatient clinic falls and near-falls ÷ Total number of clinic attendances) × 100
Numerator	Number of recorded falls and near-falls in the rehabilitation outpatient clinic during the reporting period.
Denominator	Total number of patients physically seen in the rehabilitation outpatient clinic during the same period.
Target	<2%
Data Collection Frequency	Monthly
Tracer Methodology	Audit incident reporting logs, nurse station notes. Validate with clinical documentation and safety incident forms.
PIC – Person In charge	Outpatient Clinic Safety Officer/Rehabilitation Medicine Nurse-in-Charge or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	Percentage of inpatients with functional measure assessment upon admission and prior to cessation of patient rehabilitation programme
Rationale	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 in adequate discharge planning and minimization of risk of readmission.
Definition of Terms	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 and Exclusion Criteria	Inclusion: All inpatients referred/admitted to inpatient Rehabilitation Medicine services. Exclusion: 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
Indicator Type	Rate Based Process Indicator
Formula	Functional Assessment Rate (%) = (Number of inpatients with functional measure assessment prior to cessation of inpatient rehabilitation care ÷ Total number of inpatients who ceased an inpatient rehabilitation care during the specified period) × 100
Numerator	Number of inpatients with functional measure assessment prior to cessation of inpatient rehabilitation care
Denominator	Total number of inpatients who ceased an inpatient rehabilitation care during the specified period
Target	>90%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review patient case files and therapy logs for baseline and discharge assessment entries. Validate scale use and score completeness. Cross-match discharge summary against therapy documentation.
PIC – Person In charge	Rehab Physiotherapist Team Lead/Inpatient Rehab Documentation Coordinator or any other related appointed person.

17A

**Service
Standard 17A:
Allied Health
Professional
Services -
Physiotherapy
Services**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 17A: Allied Health Professional Services – Physiotherapy Services

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Incidence of burns sustained during delivery of electrotherapeutic modalities or thermal agents	Zero (0) incidents (0%)	Monthly
02	Patients with musculoskeletal conditions who reported a reduction in pain score (VAS) across physiotherapy sessions (minimum of three [3] sessions) within two (2) months	≥80%	Monthly
03	Percentage of in-patient referrals seen by the physiotherapist within 24 hours	≥90%	Monthly
04	Rate of positive outcomes from cases referred for chest physiotherapy by Intensive Care Unit	≥75%	Monthly
05	Improvement in modified Rivermead mobility index (MRMI) score	≥80%	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Incidence of Burns Sustained During Delivery of Electrotherapeutic Modalities or Thermal Agents
Rationale	Burns during physiotherapy are entirely preventable and indicate a failure in clinical protocol adherence. Monitoring this indicator reinforces patient safety and ensures adherence to established electrotherapy guidelines. It aligns with national goals to minimize avoidable patient harm and reflects priority on clinical risk management and safe care environments.
Definition of Terms	Burns: Tissue damage following the application of electrotherapeutic modalities and thermal agents resulting in excessive/latent redness and pain or blistering of skin over the area treated Electrotherapeutic Modalities: Shortwave diathermy, microwave diathermy, infrared ray. Thermal Agents: Hot packs, paraffin wax baths.
Inclusion and Exclusion Criteria	Inclusion: All patients undergoing treatment using electrotherapeutic modalities or thermal agents. Exclusion: Not applicable (sentinel event).
Indicator Type	Sentinel Event Indicator — process-focused with zero tolerance.
Formula	Burn Injury Rate during Electrotherapy (%) = (Number of burn incidents during electrotherapy or thermal agents ÷ Total number of patients treated with electrotherapy or thermal agents) × 100
Numerator	Number of burn incidents sustained during the administration of electrotherapeutic modalities or thermal agents.
Denominator	Total number of patients treated with electrotherapeutic modalities or thermal agents.
Target	Zero (0) incidents (0%)
Data Collection Frequency	Monthly
Tracer Methodology	Review incident reports and physiotherapy logbooks. Validate equipment usage records and staff competency documentation. Cross-verify with institutional incident reporting system.

Field	Indicator
PIC – Person In charge	Senior Physiotherapist or Allied Health Services Coordinator assigned to physiotherapy safety protocols or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Patients with Musculoskeletal Conditions Who Reported a Reduction in Pain Score (VAS) Across Physiotherapy Sessions (Minimum of Three [3] Sessions) Within Two (2) Months
Rationale	This indicator assesses the clinical effectiveness of physiotherapy in managing musculoskeletal pain. Tracking pain reduction promotes timely reassessment, personalized treatment adjustments, and supports proactive interventions. It contributes to better functional recovery and satisfaction among outpatients.
Definition of Terms	Musculoskeletal Condition: Conditions involving soft or hard tissue structures such as bones, muscles, ligaments, and tendons. Visual Analogue Scale (VAS): A numeric pain measurement scale ranging from 0 (no pain) to 10 (worst imaginable pain). Reduction in Pain Scale: Patient experienced a reduction in pain based on VAS pain scale (at least 1 numeric number) after receiving physiotherapy treatment. Comparison between pre and post treatment. Physiotherapy Session: All physiotherapy treatment that's related to pain management.
Inclusion and Exclusion Criteria	Inclusion: All newly referred musculoskeletal outpatients undergoing physiotherapy with a minimum of three (3) physiotherapy sessions within a 2-month period. Exclusion: Patient didn't suffer for pain, VAS = 0 during the first assessment, non-musculoskeletal conditions and patients receiving less than three (3) physiotherapy sessions.
Indicator Type	Rate-Based Outcome Indicator
Formula	Pain Reduction Effectiveness Rate (%) = (Number of musculoskeletal patients with ≥ 1-point reduction in VAS after ≥ 3 physiotherapy sessions within 2 months $\div$ Total number of musculoskeletal patients suffered for pain who completed ≥ 3 sessions within 2 months) $\times 100$
Numerator	Number of musculoskeletal outpatients who reported a reduction in pain scale (VAS) by at least 1 point after a minimum of three (3) physiotherapy sessions within two (2) months.
Denominator	Total number of musculoskeletal outpatients who completed at least 3 physiotherapy sessions within two (2) months.
Target	At least 80% of patients should report pain reduction.

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review outpatient case notes and physiotherapy session logs. Cross-check pre- and post-treatment VAS scores in assessment forms and verify session counts against attendance records.
PIC – Person In charge	Head of Physiotherapy Department or designated Senior Physiotherapist responsible for programme quality metrics any other related appointed person.

Performance Indicator 03

Field	Indicator
Full Title	Percentage of In-Patient Referrals Seen by the Physiotherapist Within 24 Hours
Rationale	Timely physiotherapy intervention is essential for early mobilization, functional recovery, and discharge planning. Delayed physiotherapy can prolong hospital stay and increase the risk of complications. This indicator reflects both access to care and patient-centred timeliness, aligning with national quality goals for inpatient rehabilitation.
Definition of Terms	In-Patient: Patients who are admitted in the ward. Seen Within 24 Hours: Patient is assessed and/or treated by a physiotherapist within 24 hours from the time the referral is received on a working day. Working days: Physiotherapy services are available on weekdays i.e. Mondays to Friday or Sunday to Thursday (according to individual states)
Inclusion and Exclusion Criteria	Inclusion: All inpatient physiotherapy referrals received during working days. Exclusion: Referrals received after working hours, during weekends or public holidays; patients discharged or deceased before being seen.
Indicator Type	Rate-Based Process Indicator
Formula	Inpatient Physiotherapy Response Rate (%) = (Number of inpatient referrals seen within 24 hours ÷ Total number of inpatient referrals received) × 100
Numerator	Number of inpatient referrals attended by a physiotherapist within 24 hours of receiving the referral.
Denominator	Total number of inpatient physiotherapy referrals received during the reporting period.
Target	≥90% of inpatient referrals attended within 24 hours.
Data Collection Frequency	Monthly
Tracer Methodology	Audit physiotherapy referral logs and timestamped intake records. Match referral receipt time with documented physiotherapy assessment or treatment notes. Conduct random ward-based sampling across clinical units to validate compliance.

Field	Indicator
PIC – Person In charge	Physiotherapy Unit Coordinator or designated inpatient physiotherapy services lead any other related appointed person.

Performance Indicator 04

Field	Indicator
Full Title	Rate of positive outcomes from cases referred for chest physiotherapy by Intensive Care Unit
Rationale	This indicator was selected: 1. To enhance the effectiveness of physiotherapy treatment management. 2. To provide prompt and efficient physiotherapy service and prevent complications
Definition of Terms	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: i. decreased volume of secretions ii. changes in breath sounds improved vital signs iii. increased oxygen in the blood as measured by arterial blood gas values iv. patient reports of eased breathing 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. Reference: The Free Dictionary by Farlex

Field	Indicator
Inclusion and Exclusion Criteria	Inclusion: All ICU patients referred for chest physiotherapy. Exclusion: i. Myocardial instability: a. Systolic BP (140/min) b. Heart Rate (>140/min) c. Evidence of acute myocardial ischemic last 24 hours d. Dysrhythmia requiring new anti-dysrhythmic agents last 24 hours ii. Increased ICP >20mmHg iii. Aneurysm iv. Un-stabilized head injury v. Recent spinal injury/surgery (less than 24 hours) vi. Acute haemorrhage i.e. APO (Acute Pulmonary Oedema) vii. Pulmonary Embolism before anti - coagulant drugs 8. Active Pulmonary Tuberculosis before anti Tuberculosis drug
Indicator Type	Rate-Based Outcome Indicator
Formula	ICU Chest Physiotherapy Effectiveness Rate (%) = (Number of ICU cases with documented positive outcome after chest physiotherapy ÷ Total number of ICU cases treated with chest physiotherapy) × 100
Numerator	Number of ICU patients referred for chest physiotherapy who achieved positive clinical outcomes after intervention.
Denominator	Total number of ICU patients referred and treated with chest physiotherapy.
Target	≥75% of ICU chest physiotherapy cases should demonstrate clinical improvement.
Data Collection Frequency	Monthly
Tracer Methodology	Review ICU referral logs and physiotherapy documentation. Audit patient progress notes, ventilator parameters, and weaning records. Cross-reference physiotherapy session records with ICU outcome indicators.

Field	Indicator
PIC – Person In charge	Lead Physiotherapist for ICU coverage or Rehabilitation Services Coordinator managing ICU-linked workflows or any other related appointed person.

Performance Indicator 05

Field	Indicator
Full Title	Improvement in Modified Rivermead Mobility Index (MRMI) Score Within Six (6) Months of Physiotherapy Intervention for Newly Referred Stroke Patients
Rationale	Mobility recovery is a critical goal in stroke rehabilitation. The MRMI provides a structured measure of progress in functional mobility tasks. Tracking this indicator supports evidence-based clinical decisions, standardises recovery expectations, and reflects the effectiveness of physiotherapy programs for neurorehabilitation.
Definition of Terms	Newly Referred Stroke Patient: Individual diagnosed with cerebrovascular accident, confirmed by imaging and clinical symptoms. Improvement in Modified Rivermead Mobility Index: An improvement in functional ability of a stroke patient based on Modified Rivermead Mobility Index after 6 months of physiotherapy interventions.
Inclusion and Exclusion Criteria	Inclusion: All stroke patients newly referred to physiotherapy Exclusion: 1. Defaulter 2. Cognitive impairment 3. Lack of family support 4. Patient suffered for progressive neurological disease
Indicator Type	Rate-Based Outcome Indicator
Formula	MRMI Mobility Improvement Rate (%) = (Number of stroke patients with increased MRMI score at least 1 score (11.7%) at 6 months ÷ Total number of newly stroke patients referred) × 100
Numerator	Number of newly referred stroke patients who showed an improvement in MRMI score of at least 1 score (11.7%) in Modified Rivermead Mobility Index within six (6) months of physiotherapy intervention.
Denominator	Total number of newly referred adult stroke patients
Target	≥80% of patients demonstrate improvement in MRMI score within 6 months.
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review physiotherapy records for baseline and 6-month MRMI documentation. Verify reassessment timing relative to initial referral. Cross-check progress notes and therapy session logs for documented mobility interventions.
PIC – Person In charge	Physiotherapy Officer responsible for stroke rehabilitation pathway and MRMI documentation or any other related appointed person.

17B

**Service
Standard 17B
Allied Health
Professional
Services –
Occupational
Therapy
Services**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 17B: Allied Health Professional Services – Occupational Therapy Services Performance Indicator Summary

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

PI No.	Indicator Title	Target	Reporting Frequency
01	Percentage of Stroke Patients with Improvement of Activities of Daily Living (ADL) Independence after 3 Months of Occupational Therapy Interventions	≥75%	Six-Monthly
02	Percentage of Patients with Hand and Upper Limb Injury Who Have Attained a Full Score in Prehension Patterns within 3 Months of Occupational Therapy Interventions	≥85%	Six-Monthly
03	Percentage of Patients with Developmental Disabilities Who Improve in at Least One Component of Development after 6 Months of Occupational Therapy Interventions	≥80%	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of Stroke Patients with Improvement of Activities of Daily Living (ADL) Independence after 3 Months of Occupational Therapy Interventions
Rationale	This indicator was selected because: 1. The rate at which independence level is achieved varies between hospitals. The rate needs to be standardized. 2. There is strong evidence to show that there is significant improvement after ADL intervention among the stroke patients.
Definition of Terms	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. Activities of Daily Living (ADL): Activities related to grooming, bathing, toilet, dressing, feeding, transfer/wheelchair, bowel control, urinary control, walking and climbing stairs. Modified Barthel ADL Index (MBI): 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, wheelchair and transfer from chair/bed. Score of MBI: 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) Cohort Period: Data for this indicator is collected for a period of 3 months upon referral. Treatment session can be delivered in the ward, in the Occupational Therapy Department or in the patient's home/place of stay.

Field	Indicator
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All stroke patients referred for Occupational Therapy. 2. Age 18 years old and above. Exclusion Criteria: 1. Stroke patients with MBI score of 91 and above. 2. Stroke occurring after brain injury or brain tumour. 3. Recurrent stroke during cohort period. 4. Patient who did not turn up for three consecutive appointments. 5. Patient without good social support.
Indicator Type	Rate-based outcome indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100\%$
Numerator	The total number of STROKE patients who have improved a minimum of one level of dependency in MBI within 3 months of intervention
Denominator	The total number of STROKE patients referred to Occupational Therapy (fulfil inclusion criteria)
Target	$\geq 75\%$
Data Collection Frequency	3 Monthly
Tracer Methodology	Review of patient case notes and MBI assessment records. Auditor to verify baseline MBI score at referral and MBI score at 3-month follow-up for all eligible stroke patients in the cohort period. All patients fulfilling inclusion criteria to be reviewed.
Person In charge (PIC)	Head of Occupational Therapy Department / Occupational Therapist in charge of stroke rehabilitation / or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Patients with Hand and Upper Limb Injury Who Have Attained a Full Score in Prehension Patterns within 3 Months of Occupational Therapy Interventions
Rationale	This indicator measures the effectiveness of occupational therapy treatment for cases of hand and upper limb injuries treated in hospital through the measurement of hand prehension scores. There is strong evidence to show that there is significant improvement in hand function after Occupational Therapy interventions among the patients with hand injuries.
Definition of Terms	Hand prehension is defined as the ability of the hand to hold an object between two surfaces of the hand through 7 forms as follows: 1. Hook: such as holding a handbag holder or bucket handle 2. Lateral: like holding a key 3. Tip Pinch (Tip to Tip): like holding a needle 4. Pad Pinch: like holding a 20-cent coin 5. Tripod Pinch: like holding a pencil or pen 6. Cylindrical: such as holding a cylindrical object such as a can of drinking water 7. Spherical: holding a spherical object such as a tennis ball (Edward, Buckland, McCoy-Powlen, 2002) Hand prehension ability means a full score against a score of 7/7 for all hand prehension abilities. In cases where injuries occur to both hands, scores are taken on the hand that gets the highest score only. Hand injuries mean all injuries that occur to the area located from shoulder level to the fingertips including burn injuries.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. New diagnosis of hand and upper limb injuries. 2. Patients who scored a hand prehension ability score of less than 7/7 during the initial assessment. 3. Patients aged 4 years and above. Exclusion Criteria: 1. Patients with complete brachial plexus nerve injury.

Field	Indicator
	2. Patients with amputation of the entire thumb (from the level of the Metacarpophalangeal (MCP) joint) and amputation of 3 fingers (from the level of the MCP joint and below) 3. Hand injury due to excessive or repetitive or degenerative movements such as Carpal Tunnel Syndrome, Trigger Finger, De Quervain's Tenosynovitis, and others. 4. Patients who absent for 3 consecutive treatment sessions.
Indicator Type	Rate-based outcome indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100\%$
Numerator	The total number of patients who achieved a full score of hand prehension ability within 3 months of interventions
Denominator	The total number of patients with hand injuries referred to Occupational Therapy (fulfil inclusion criteria)
Target	$\geq 85\%$
Data Collection Frequency	3 Monthly
Tracer Methodology	Review of patient case notes and hand prehension assessment records. Auditor to verify baseline prehension score at referral and prehension score at 3-month follow-up for all eligible patients in the cohort period. All patients fulfilling inclusion criteria to be reviewed.
Person In charge (PIC)	Head of Occupational Therapy Department / Occupational Therapist in charge of hand rehabilitation / or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of Patients with Developmental Disabilities Who Improve in at Least One Component of Development after 6 Months of Occupational Therapy Interventions
Rationale	This indicator was selected because: 1. Children with development disabilities is commonly seen in occupational therapy setting. 2. The rate of developmental improvements among children with developmental disabilities is vary between facilities. Thus, rate needs to be standardized. There is strong evidence in improvement of development component among children with developmental disabilities after occupational therapy intervention. 3. This indicator reflects Clinical Effectiveness and Efficiency.
Definition of Terms	Developmental disabilities: Any of various conditions (such as autism spectrum disorder, cerebral palsy, intellectual disability, blindness, or fragile X syndrome) that usually become apparent during infancy or childhood and are marked by delayed development or functional limitations especially in learning, language, communication, cognition, behaviour, socialization, or mobility. Denver Development Screening Test II (Denver II): Is a screening tool that measures 4 components of children development: i. Personal-social ii. Fine motor-adaptive iii. Language iv. Gross motor
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients with developmental delay below 5 years old. Exclusion Criteria: Children with severe epilepsy.
Indicator Type	Rate-based outcome indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100\%$

Numerator	Total number of patients with developmental disabilities who improve in at least one component of development after 6 months of Occupational Therapy interventions
Denominator	Total number of patients referred with developmental disabilities
Target	> 80%
Data Collection Frequency	6 Monthly
Tracer Methodology	Review of patient case notes and Denver II assessment records. Auditor to verify baseline developmental assessment at referral and reassessment at 6-month follow-up for all eligible patients in the cohort period. All patients fulfilling inclusion criteria to be reviewed.
Person In charge (PIC)	Head of Occupational Therapy Department / Occupational Therapist in charge of paediatric rehabilitation / or any other related appointed person.

17C

**Service
Standard 17C:
Allied Health
Professional
Services –
Dietetic
Services**

**MSQH 7th Edition
Performance Indicator**

Service Standard 17C: Allied Health Professional Services – Dietetic Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of Inpatients Assessed for Malnutrition Risk Through Nutritional Screening Within 24 Hours of Referral Being Received by the Dietitian	≥ 70%	Monthly
02	Percentage of Outpatient Referrals Seen by the Dietician Within the Stipulated Time by the Dietetic Services and Approved by the Facility	≥85%	Monthly
03	Percentage of High-Risk Malnutrition Patients Receiving Nutritional Follow-up Care	≥ 70%	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of Inpatients Assessed for Malnutrition Risk Through Nutritional Screening within 24 Hours of Referral Being Received by the Dietitian
Rationale	1. National patient DRM data: Obtaining DRM information and data for patient, cost and human resource management purposes. 2. Improving detection of patients at risk of malnutrition: Promoting nutritional screening through screening and referral programs for early identification and prevention of malnutrition. 3. Prioritising management of patients at risk of malnutrition: Prioritising through more focused follow-up care and dietary interventions. Source: NIA Indicator Dictionary Version 1.0/2026, Indicator 3.3.
Definition of Terms	Malnutrition Risk Assessment: The process of identifying individuals at risk of malnutrition using validated nutritional screening questions according to the patient population/category. Assessment methods (phased implementation): 1. MST: 18–65 years (Phase 1: 2026) 2. MNA-SF: 65 years and above (Phase 2: 2027) 3. PNST: 18 years and below (Phase 3: 2027) 4. NRS 2002: Critically ill patients (Phase 4: 2027) Patients receiving assessment: 1. Cases referred to the Dietetic Officer 2. Inpatients eligible for malnutrition risk assessment Risk of malnutrition is classified as low, moderate and high based on the total MST score using the Malnutrition Screening Tool (MST): 1. Total score 0–1: Low risk of malnutrition — monitoring and re-screening if necessary 2. Total score 2: Moderate risk of malnutrition — monitoring and follow-up treatment if needed 3. Total score 3–5: High risk of malnutrition — monitoring and follow-up treatment within 24 hours–5 days Nutritional Screening: Conducted using the Malnutrition Screening Tool (MST). Screened by a dietitian within 24 hours: Referred patients are screened within 24 hours after referral is received. Patient referrals to

Field	Indicator
	the Dietetic Officer are screened within 24 hours after referral is received on working days.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. Referred to the Dietetic Officer 2. 18–65 years 3. Taking a diet (oral/tube/combination — includes oral and tube or TPN/oral) Exclusion Criteria: 1. Antenatal and postnatal 2. Intensive care patients
Indicator Type	Rate-based process indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100\%$
Numerator	Number of patients undergoing malnutrition risk assessment through nutritional screening within 24 hours of referral
Denominator	Number of patients eligible for screening for malnutrition risk assessment after referral
Target	$\geq 70\%$
Data Collection Frequency	Monthly. Setting: All MOH hospitals with resident dietitians (102 hospitals).
Tracer Methodology	Review of dietician referral records, MST screening documentation, and case notes. Auditor to verify date and time of referral against date and time of malnutrition risk screening for all eligible inpatients in the reporting period. All patients fulfilling inclusion criteria to be reviewed.
Person In charge (PIC)	Head of Dietetic Services / Dietician in charge of malnutrition screening programme / or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Outpatient Referrals Seen by the Dietician Within the Stipulated Time by the Dietetic Services and Approved by the Facility
Rationale	This indicator was selected because: 1. 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. 2. This indicator reflects Timely Access and Patient Centeredness.
Definition of Terms	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. 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 and Exclusion Criteria	Inclusion: All patients requiring dietary consultation Exclusion: 1. Patient referred for urgent dietary intervention 2. Patient referred but discharged without being seen by dietician 3. Patient referred but passed away before being seen by dietician
Indicator Type	Rate-Based Process Indicator
Formula	Outpatient Dietetic Timeliness Rate (%) = (Number of out- patient referrals seen by the Dietician within the stipulated time ÷ Total number of out-patients referred to the dietician) × 100
Numerator	Number of out- patient referrals seen by the Dietician within the stipulated time
Denominator	Total number of out-patients referred to the dietician
Target	≥85%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Review outpatient referral logs and timestamps; verify first dietitian action date/time against referral receipt date; conduct audit sampling of non-urgent referrals monthly.
PIC – Person In charge	Outpatient Dietitian Coordinator or Head of Dietetic Services managing scheduling and referral intake or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of High-Risk Malnutrition Patients Receiving Nutritional Follow-Up Care
Rationale	1. To ensure that high risk malnutrition patients seen by the Dietetic Officer receive follow-up care. 2. To improve the effectiveness of intervention by ensuring compliance, acceptance and understanding of intervention by the Dietetic Officer to the patient. 3. To ensure adherence to documentation standards. 4. To improve clinical management. 5. To improve cost efficiency. Source: Cadangan Dimensi Daya Saing & KPI PPTPA Sektor Teknikal KKM Profesion Dietetik 2026 (Versi 2). Target justification: Kajian validasi penentuan kadar rawatan susulan Pegawai Dietetik di kalangan pesakit berisiko tinggi malnutrisi
Definition of Terms	Malnutrition Risk Assessment: The process of identifying patients at risk of malnutrition through nutritional screening at the first encounter with the Dietetic Officer. Screening is conducted using the validated Malnutrition Screening Tool (MST). Screening information may be obtained from patient records, guardian/family member of the patient if information cannot be obtained from the patient due to medical problems and communication difficulties. Components of MST are history of weight loss and appetite. Risk of malnutrition is assessed based on total MST score (Part A: weight loss history; Part B: appetite): - Total score 0–1: Low risk of malnutrition - Total score 2: Moderate risk of malnutrition - Total score 3–5: High risk of malnutrition Follow-up care (Rawatan susulan): Monitoring and reassessment of the patient's nutritional status to determine the effectiveness of intervention. Must be documented in the patient's Dietetic Care Note. Follow-up care must be conducted at least once within a period of ≥ 24 hours – 5 working days after first being seen by the Dietetic Officer. Time of ward admission (Tempoh kemasukan ke wad): The period of time required to provide follow-up care to the patient. This period is ≥ 24 hours – 5 working days after first being seen by the Dietetic Officer.

Field	Indicator
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. Patient has been referred to and seen by the Dietetic Officer. 2. Patient aged 18–65 years. 3. Receiving diet via oral/tube or combination including TPN. Exclusion Criteria: 1. Antenatal and postnatal patients. 2. Paediatric patients (0–18 years). 3. Frequent admission patients (Pesakit rawatan rapi).
Indicator Type	Rate-based process indicator Note: Dropout criteria (excluded from denominator): 1. Patient confirmed to be receiving palliative/DIL/NAR care during first visit by Dietetic Officer. 2. Patient expected to be discharged ≤ 24 hours after first visit by Dietetic Officer. 3. Patient passed away ≤ 24 hours after first visit by Dietetic Officer.
Formula	$A \div (B - \text{Dropout}) \times 100$ Where: A = Number of high-risk malnutrition patients receiving follow-up care B = Number of patients classified as high-risk malnutrition Dropout = Patients meeting dropout criteria
Numerator	Number of high-risk malnutrition patients receiving nutritional follow-up care
Denominator	Number of patients classified as high-risk malnutrition minus dropout
Target	$\geq 70\%$
Data Collection Frequency	Six-monthly
Tracer Methodology	Review of patient Dietetic Care Notes and referral records. Auditor to verify for each high-risk malnutrition patient: (1) MST score at first encounter, (2) whether follow-up care was documented within ≥ 24

Field	Indicator
	hours – 5 working days of first Dietetic Officer visit. Dropout cases to be identified and excluded from denominator. All eligible inpatients in the reporting period to be reviewed.
Person In charge (PIC)	Head of Dietetic Services / Dietetic Officer in charge of malnutrition follow-up programme / or any other related appointed person.

17D

**Service
Standard 17D:
Allied Health
Professional
Services –
Speech-
Language
Therapy
Services**

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 17D: Allied Health Professional Services – Speech-Language Therapy Services

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of New 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
02	Percentage of Inpatient Referrals of Swallowing and Feeding Difficulties Responded Within Three (3) Working Days	≥85%	Monthly
03	Percentage of Patient Satisfaction Towards Patient Education in Therapy	≥85%	Six-monthly
04	Percentage of Stroke and Traumatic Brain Injury (TBI) Patients with Dysphagia Achieving at Least Level 4 on the Functional Oral Intake Scale (FOIS) Within 4 Months	≥90%	Six-monthly
05	Percentage of Patient Satisfaction Towards Speech-language therapy services	≥85%	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of New 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)
Rationale	This indicator was selected because: 1. 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. 2. 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 and Exclusion Criteria	Inclusion: All new outpatients referred to Speech Pathologist for consultation or management Exclusion: NA
Indicator Type	Rate-Based Process Indicator
Formula	Appointment Timeliness Rate (%) = (Number of new outpatient cases given appointment to the Speech – Language Therapist within 90 days of referral ÷ Total number of new outpatient referrals received by Speech-Language Therapist for initial appointment) × 100
Numerator	Number of new outpatient cases given appointment to the Speech – Language Therapist within 90 days of referral
Denominator	Total number of new outpatient referrals received by Speech-Language Therapist for initial appointment
Target	≥85% of new outpatient referrals should receive their first appointment within 90 days.
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Audit outpatient referral registers and appointment scheduling systems; compare request dates against first appointment dates; verify exclusions for cancellations or patient-initiated deferrals.
PIC – Person In charge	Speech-Language Therapy Outpatient Coordinator, Head of Speech-Language Therapy Services or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Inpatient Referrals of Swallowing and Feeding Difficulties Responded Within Three (3) Working Days
Rationale	This indicator was selected because: 1. 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. 2. 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: a. 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. b. Aspiration pneumonia: If food or liquid enter the lungs it can cause a lung infection. c. Dehydration: Not drinking enough fluids is bad for health and can lead to problems such as constipation. d. 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 and Exclusion Criteria	Inclusion: All in-patients referred to Speech – Language Therapist for management of swallowing and feeding difficulties. Exclusion: Patients discharged, transferred, or deceased before speech-language therapy (SLT) response; referrals submitted outside working hours or on public holidays.
Indicator Type	Rate-Based Process Indicator

Field	Indicator
Formula	SLT Inpatient Response Rate (%) = (Number of in-patients referred and responded within 3 days by Speech Therapist for swallowing and feeding difficulties ÷ Total number of in-patients referred to Speech Therapist for swallowing and feeding difficulties) × 100
Numerator	Number of in-patients referred and responded within 3 days by Speech Therapist for swallowing and feeding difficulties
Denominator	Total number of in-patients referred to Speech Therapist for swallowing and feeding difficulties
Target	≥85% of inpatient swallowing and feeding referrals responded to within three (3) working days.
Data Collection Frequency	Monthly
Tracer Methodology	Review inpatient referral logs and SLT documentation; match referral date with first SLT clinical contact; verify exclusions for early discharge, transfer, or non-working days.
PIC – Person In charge	Inpatient Speech-Language Therapy Coordinator, Head of Speech-Language Therapy Unit or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of Patient Satisfaction Towards Patient Education in Therapy
Rationale	This indicator was selected because: 1. Speech- Language Pathology Services consultation and support services are an integral part of total rehabilitative care. 2. 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	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. 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 behaviour. 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 and Exclusion Criteria	Inclusion: All outpatients who receive documented Speech-Language Therapy education and complete a satisfaction feedback form. Exclusion: In-patient satisfaction survey
Indicator Type	Patient Satisfaction Survey
Formula	SLT Education Satisfaction Rate (%) = (Number of outpatients given patient education therapy with ≥ 80% satisfaction level ÷ Total number of outpatients given patient education therapy) × 100
Numerator	Number of outpatients given patient education therapy with ≥ 80% satisfaction level
Denominator	Total number of outpatients given patient education therapy
Target	≥85% patient satisfaction rate.

Field	Indicator
Data Collection Frequency	Six-monthly
Tracer Methodology	Review completed patient satisfaction questionnaires post-therapy; cross-match with therapy records confirming education delivery; exclude incomplete or invalid responses according to policy.
PIC – Person In charge	Speech-Language Therapy Unit Head, designated Patient Experience Coordinator or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	Percentage of Stroke and Traumatic Brain Injury (TBI) Patients with Dysphagia Achieving at Least Level 4 on the Functional Oral Intake Scale (FOIS) Within 4 Months
Rationale	This indicator evaluates the effectiveness of intervention provided to paediatric and adult patients with dysphagia caused by stroke or TBI. Effective management improves swallowing function, nutritional status, and overall quality of life.
Definition of Terms	Paediatric Patient: Patient aged 1–18 years (Child Act 2001, Malaysian Paediatric Association). Adult Patient: ≥19 years. Stroke Patient: Cerebrovascular Accident (CVA) due to blockage, narrowing, or rupture of blood vessels causing reduced blood supply or bleeding in the brain. Traumatic Brain Injury (TBI): Brain injury due to trauma or accident. Dysphagia: Disorder in chewing, swallowing, or transferring food from mouth to stomach. Time Frame: Within 4 months after initial assessment. Functional Oral Intake Scale (FOIS): Level 1–3 (tube dependent), Level 4–7 (oral intake).
Inclusion and Exclusion Criteria	Inclusion: All newly referred patients (inpatient and outpatient), paediatric and adult with dysphagia due to Stroke or TBI. Exclusion: 1. Patients with other conditions affecting swallowing (e.g., cancer, Parkinson's, neurodegenerative diseases) 2. Defaulters 3. Patients not on feeding tube or unwilling to remove tube 4. Referred out or deceased.
Indicator Type	Outcome Indicator
Formula	$(\text{Number of patients achieving FOIS} \geq \text{Level 4 within 4 months} \div \text{Total number of stroke and TBI patients with dysphagia}) \times 100$
Numerator	Number of stroke and TBI patients with dysphagia who achieve at least FOIS Level 4 within 4 months
Denominator	Total number of stroke and TBI patients with dysphagia
Target	≥ 90%

Field	Indicator
Data Collection Frequency	Six-Monthly
Tracer Methodology	Review Speech Therapy records and dysphagia assessment forms. Verify baseline and follow-up FOIS scores within 4 months. Cross-check feeding progression (tube to oral intake). Audit intervention plans and timelines. Validate with multidisciplinary records (medical notes, dietitian input). Ensure compliance with inclusion/exclusion criteria.
PIC (Person In charge)	Speech-Language Therapist (SLT), Head of Rehabilitation Unit, Rehabilitation Physician, Quality Unit or any other related appointed person.

Performance Indicator 05

Field	Indicator
Indicator Title	Percentage of Patient Satisfaction Towards Speech-Language Therapy Services
Rationale	This indicator was selected because: 1. Speech-Language Pathology Services consultation and support services are an integral part of total rehabilitative care. 2. As a 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	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. Speech-Language Therapy Services: The full range of assessment, intervention, and support services provided by Speech-Language Pathologists/Therapists to patients with communication, swallowing, and related disorders across inpatient and outpatient settings. The patient/family/significant others play an active part in the process. Patient and family satisfaction is an interdisciplinary and collaborative measure designed to capture the needs of the individual patient throughout the continuum of care.
Inclusion and Exclusion Criteria	Inclusion Criteria: All outpatients who receive Speech-Language Therapy services and complete a satisfaction feedback form, in specific cohort Exclusion Criteria: In-patient satisfaction surveys.
Indicator Type	Patient Satisfaction Survey
Formula	$\text{SLT Satisfaction Rate (\%)} = \left(\frac{\text{Number of outpatients who rated Speech-Language Therapy services with } \geq 80\% \text{ satisfaction level}}{\text{Total number of outpatients who received Speech-Language Therapy services}} \right) \times 100$
Numerator	Number of outpatients who rated Speech-Language Therapy services with $\geq 80\%$ satisfaction level
Denominator	Total number of outpatients who received Speech-Language Therapy services

Field	Indicator
Target	≥ 85% patient satisfaction rate
Data Collection Frequency	Six-monthly
Tracer Methodology	Review completed patient satisfaction questionnaires post-therapy; cross-match with therapy records confirming service delivery; exclude incomplete or invalid responses according to policy
Person In charge (PIC)	Speech-Language Therapy Unit Head / designated Patient Experience Coordinator / or any other related appointed person.

17E

Service Standard 17E: Allied Health Professional Services – Audiology Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 17E: Allied Health Professional Services – Audiology Services

Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of Patients Who Received Hearing Aid Provision Following Diagnosis of Hearing Loss Within Eight (8) Weeks	≥90%	Six-Monthly
02	Percentage of Newborn Babies Who Underwent Hearing Screening (Universal Newborn Hearing Screening) Within 28 Days After Birth	≥60%	Six-Monthly
03	Percentage of Paediatric New Cases Given an Appointment at the Audiology Clinic Within 60 Days from the Date of Receiving the Referral.	≥50%	Six-Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of Patients Who Received Hearing Aid Provision Following Diagnosis of Hearing Loss Within Eight (8) Weeks
Rationale	This indicator was selected because: 1. Patients with hearing loss should start early intervention. The time interval between diagnosis of hearing loss until the patients received hearing aid (HA) provision reflects on patients focused care 2. A delay in HA trial would delay the time of HA prescription and HA fitting which may lead to the deterioration of patient's quality of life 3. Patient-centred care must align with patient-centred goals in a timely manner (the right care is provided at the right time).
Definition of Terms	Waiting time for hearing aid provision: 1. A hearing aid- is a battery-powered electronic device designed to amplify sound and to improve hearing. A hearing aid includes air conduction (ACHA) and/ or BCHA (bone conduction) 2. Hearing aid provision- a process involving HA trial and HA prescription (for an adult) and hearing aid prescription only (for paediatric) 3. Diagnosis of hearing loss- confirmed the presence of hearing loss (peripheral and central).
Inclusion and Exclusion Criteria	Inclusion: All new patients diagnosed with hearing loss who require hearing aid provision. Exclusion: 1. Patient not keen on hearing aid 2. Patients request an appointment date of more than 8 weeks due to specific reasons (e.g.: health problems, financial constraints, logistic issues) 3. Patient covered by PERKESO and MAKNA.
Indicator Type	Rate-Based Process Indicator
Formula	Hearing Aid Provision Timeliness Rate (%) = (Number of patients received hearing aid provision within 8 weeks ÷ Total number of patients received hearing aid provision) × 100
Numerator	Number of patients received hearing aid provision within 8 weeks

Field	Indicator
Denominator	Total number of patients received hearing aid provision
Target	≥90% of eligible patients should receive hearing aid provision within 8 weeks.
Data Collection Frequency	Six-monthly
Tracer Methodology	Audit hearing aid provision logs and appointment records; verify diagnosis date against fitting or prescription date; exclude documented patient-requested delays or declined cases.
PIC – Person In charge	Coordinator of Audiology Clinic, Head of Audiology Unit or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Newborn Babies Who Underwent Hearing Screening (Universal Newborn Hearing Screening) Within 28 Days After Birth
Rationale	The prevalence of hearing loss among infants in Malaysia is approximately 4 per 1,000 live births (JKTA, 2020). Hearing loss in infants is considered a neurodevelopmental emergency, as it can significantly affect language acquisition, speech development, cognitive skills, social interaction, literacy, and academic achievement if not detected and managed early. The primary objectives of the newborn hearing screening program are to screen infants before one (1) month of age, diagnose any hearing impairment before three (3) months, and initiate appropriate intervention before six (6) months. Early identification and timely intervention are critical to improving developmental outcomes and quality of life for affected infants.
Definition of Terms	Newborn Hearing Screening: An objective screening method used to identify newborns who may have hearing loss and require further or diagnostic hearing assessments. There are two (2) types of newborn hearing screening tests: Automated Auditory Brainstem Response (AABR) and Otoacoustic Emission (OAE). These tests can be conducted by trained Newborn Hearing Screening Personnel from among paramedical healthcare staff. Newborn (Neonate): An infant from birth up to 28 days of age.
Inclusion and Exclusion Criteria	Inclusion: The 48 hospitals participating in the UNHS program (refer to appendix); all live-born infants delivered at these hospitals, as recorded in the birth registry reported by the Department of Obstetrics and Gynaecology. Exclusion: Infants born alive at hospitals other than the 48 participating hospitals; infants unable to undergo hearing screening on or before 28 days of age due to medical complications or ongoing treatment; infants who passed away before or on the age of 28 days and could not be screened; infants admitted to the NICU/SCN beyond 28 days of age who have not yet undergone hearing screening.
Indicator Type	Rate-Based Process Indicator
Formula	Percentage of Newborn Screened Within 28 Days Rate (%) = (Number of infants who underwent hearing screening on or before 28 days ÷ Total number of live births at the hospital) × 100
Numerator	The number of live-born infants delivered at the hospital, underwent hearing screening on or before 28 days of age.

Field	Indicator
Denominator	The total number of live births delivered at the hospital.
Target	≥60% of newborn babies should undergo hearing screening (Universal Newborn Hearing Screening) within 28 days.
Data Collection Frequency	Six-monthly
Tracer Methodology	Conduct an audit of the hospital birth registry and newborn hearing screening records. Verify each live-born infant's screening status and the date of screening, confirm screening was performed on or before 28 days of age, apply exclusions for valid medical exemptions or deaths before screening, and cross-check data accuracy using both obstetric records and audiology screening logs.
PIC – Person In charge	Coordinator of Audiology Clinic, Head of Unit or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of Paediatric New Cases Given an Appointment at the Audiology Clinic Within 60 Days from the Date of Receiving the Referral.
Rationale	Audiology services are vital in early identification and intervention for paediatric hearing loss, which significantly impacts speech, communication, and cognitive development. Prolonged waiting times for appointments delay diagnosis and treatment, potentially causing adverse developmental and psychosocial outcomes. This performance indicator supports timely access to audiology care, enhancing service efficiency and patient-centeredness.
Definition of Terms	New Case: A case referred for the first time to the Audiology Clinic for hearing status confirmation, either through hearing screening or diagnostic hearing tests. Paediatric: Children aged from 0 to 12 years old. Audiology Clinic Appointment: An appointment scheduled at the Audiology Clinic either on the same day the referral is received or the next available day, depending on clinic slot availability. Referral: Source of referral, which may be External (from any Ministry of Health facility, NGO, or private sector) or Internal (from any department/unit/ward within the hospital). Date of Referral Received: The date on which the Audiology Clinic receives the new case referral, either via referral letter or phone call. Within 60 Days: The difference in days between the date the referral is received and the date of the Audiology Clinic appointment is ≤ 60 days (including weekends and public/state holidays).

Field	Indicator
Inclusion and Exclusion Criteria	Inclusion: All new paediatric cases referred for confirmation of hearing status. Exclusion: (i) Patients who request appointments beyond 60 days due to personal reasons such as logistics, financial constraints, overlapping clinic appointments, etc. (ii) Children unable to undergo hearing tests within 60 days due to medical complications, ongoing treatments, or other medical reasons. (iii) Inborn/Outborn infants referred from the Universal Newborn Hearing Screening Program, whether for the first/second hearing screening or diagnostic hearing tests. (iv) Inpatients referred for hearing assessment while still admitted in the ward.
Indicator Type	Rate-Based Process Indicator
Formula	$\text{Audiology Access Compliance Rate} = (\text{Number of new paediatric cases given an appointment at the Audiology Clinic within 60 days from the date of referral}) \div (\text{Total number of new paediatric cases given an appointment at the Audiology Clinic}) \times 100$
Numerator	The number of new paediatric cases given an appointment at the Audiology Clinic within 60 days from the date the referral was received.
Denominator	The total number of new paediatric cases given an appointment at the Audiology Clinic.
Target	≥50% of paediatric new audiology referrals should be appointed within 60 days.
Data Collection Frequency	Six-monthly
Tracer Methodology	Audit the referral registry and appointment scheduling logs. Verify the dates of referral receipt and appointment issuance. Exclude cases with patient-requested appointment delays and medically justified deferrals. Ensure data accuracy and completeness for all paediatric new cases referred.
PIC – Person In charge	Coordinator of Audiology Clinic, Head of Unit or any other related appointed person.

17F

Service Standard 17F: Allied Health Professional Services – Optometry Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 17F: Allied Health Professional Services – Optometry Services
Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of keratoconus cases with increased levels of contact lens complications within 4 months of RGP contact lens delivery	≤20%	Six-monthly
02	Optometrist involvement at least 2 outreach programmes in current year.	100%	Yearly
03	New cases achieving best corrected visual acuity 6/6 after refraction.	≥90%	Six-monthly
04	Percentage of new patients that were given appointment for refraction procedure within ≤ 6 weeks in Optometry Clinic without Ophthalmologist.	≥ 95%	Six-monthly
05	Percentage of new patients that were given appointment for diabetic retinopathy screening within ≤ 6 weeks in Optometry Clinic at Klinik Kesihatan.	≥ 80%	Six-monthly
06	Waiting time to see Optometrist within 60 minutes.	≥ 80%	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of keratoconus cases with increased levels of contact lens complications within 4 months of RGP contact lens delivery
Rationale	This indicator was selected because: 1. RGP contact lens wear could preserve optimal vision for keratoconus patients. However prolonged wear could increase complications and compromise lens care and ensure eye safety. 2. To reduce visual morbidity among RGP contact lens wearers. 3. A reflection of the clinical process in management of keratoconus patients.
Definition of Terms	1. Keratoconus: Ocular disorder characterized by progressive thinning and changes in the shape of the cornea which can cause blurry or distorted vision, sensitivity to light (photophobia), and other visual problems. 2. Time 4 months: Is calculated from the date of contact lens delivery to the patient ($\pm$ 2 weeks). 3. RGP contact lenses: All types of RGP contact lenses such as Rose K2, Rose K XL, Rose K NC, Igel K, Rose K2 PG, As LUNA (SEED) etc. 4. Increased level of complications (from normal/mild to moderate or worse) within 4 months after RGP contact lenses delivery. 5. Complications of RGP contact lenses wear (<i>Reference: Efron Grading Scales for Contact Lens Complication</i>): a. Conjunctival redness b. Limbal redness c. Corneal neovascularization d. Epithelial microcysts e. Corneal edema f. Corneal staining g. Conjunctival staining h. Papillary conjunctivitis i. Blepharitis j. Meibomian gland dysfunction k. Superior limbal keratoconjunctivitis l. Corneal infiltrates

Field	Indicator
	m. Corneal ulcer n. Endothelial polymegathism o. Endothelial blebs p. Corneal distortion 6. Those patients referred to other hospitals for follow-up, the respective hospital has to report the aftercare outcome. (The patient is the denominator for the hospital who conducted the contact lens delivery).
Inclusion and Exclusion Criteria	Inclusion Criteria: All keratoconus patients who received RGP during contact lens delivery. Exclusion Criteria: Patients default aftercare appointment within 4 months + 2 weeks from the date of contact lens delivery.
Indicator Type	Rate Based Outcome Indicator
Formula	$\frac{\text{(Number of keratoconus cases with increased levels of contact lens complications within 4 months of RGP contact lens delivery)}}{\text{Total number of RGP contact lens delivery for keratoconus cases}} \times 100$
Numerator	Number of keratoconus cases with increased levels of contact lens complications within 4 months of RGP contact lens delivery
Denominator	Total number of RGP contact lens delivery for keratoconus cases
Target	≤ 20%
Data Collection Frequency	Six-Monthly
Tracer Methodology	Review optometry clinic records for keratoconus patients receiving RGP lenses. Verify date of contact lens delivery and follow-up within 4 months ± 2 weeks. Check documentation of complications and grading based on Efron Grading Scales. Cross-check progression from normal/mild to moderate or worse. Validate inclusion and exclusion criteria compliance. Audit patient follow-up records and complication reporting consistency.
PIC (Person In charge)	Optometrist, Ophthalmologist, Head of Optometry Services or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator Title	Optometrist involvement at least 2 outreach programmes in current year.
Rationale	This indicator was selected because: 1. To provide eye care for the community. 2. To facilitate patient access to Optometry services. 3. To promote eye care awareness. 4. To ensure all Optometrist participates in outreach programmes.
Definition of Terms	Outreach services: All outreach activities conducted outside of the place of duty (clinic) and must get approval from the Hospital Director/Head of Department.
Inclusion and Exclusion Criteria	Inclusion Criteria: All outreach activities involving the Ophthalmology Department or Optometry Unit. Exclusion Criteria: 1. Optometrist who is on leave for more than 6 months in a current year. 2. Optometrist who has medical problems with medical consent.
Indicator Type	Customer Centeredness
Formula	$(\text{Number of Optometrist who involved in at least 2 outreach programmes in a current year} \div \text{Number of Optometrist who involved in outreach programmes}) \times 100$
Numerator	Number of Optometrist who involved in at least 2 outreach programmes in a current year
Denominator	Number of Optometrist who involved in outreach programmes
Target	100%
Data Collection Frequency	Yearly
Tracer Methodology	Review outreach programme records and participation lists. Verify number of outreach activities conducted within the current year. Cross-check individual Optometrist involvement in at least 2 programmes. Validate approvals from Hospital Director/Head of Department. Audit attendance records and programme documentation.

Field	Indicator
PIC (Person In charge)	Head of Optometry Unit, Ophthalmology Department Head, Outreach Programme Coordinator or any other related appointed person

Performance Indicator 03

Field	Indicator
Indicator Title	New cases achieving best corrected visual acuity 6/6 after refraction.
Rationale	This indicator was selected because: 1. Refraction is a procedure to determine the refractive error status. (<i>Pemeriksaan Optometri Asas</i> in the Standard Operating Procedures). 2. This indicator implemented to measure the quality of the procedure which is performed by optometrist to ensure that patients with refractive errors achieved 3. 6/6 best corrected vision thus improving patients' quality of life. However, there are several factors which influence the final vision quality such as ocular diseases that can only be detected by conducting a full eye examination.
Definition of Terms	New cases: Patients who are referred for the first-time refraction. 2. 6/6: The ability to see clearly 5 metres of arc sized letters at a distance of 6 meters. Refractive assessment: Includes objective and subjective refraction.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. New case referred for refraction. 2. Habitual visual acuity before refraction was $\leq 6/10$. 3. Visual acuity measured using a Snellen chart or equivalent (Smart chart or projector chart). 4. Vision with a pinhole improved at least 6/10. Exclusion Criteria: 1. Patients who are unable to respond subjectively. 2. Paediatric < 7 years in the current year. 3. Medico-legal patients. 4. Suspected of having amblyopia. 5. Patients with ocular diseases.
Indicator Type	Outcome Based Process Indicator
Formula	$(\text{Number of new cases achieving 6/6 visual acuity after refraction for each eye} \div \text{Number of new cases achieving vision} \geq 6/10 \text{ with a pinhole}) \times 100$

Field	Indicator
Numerator	Number of new cases achieving 6/6 visual acuity after refraction for each eye.
Denominator	Number of new cases achieving vision $\geq 6/10$ with a pinhole.
Target	$\geq 90\%$
Data Collection Frequency	6 Monthly
Tracer Methodology	Review refraction records for new cases. Verify baseline habitual visual acuity $\leq 6/10$ and pinhole improvement $\geq 6/10$. Check documentation of objective and subjective refraction. Confirm final best corrected visual acuity of 6/6 for each eye. Cross-check Snellen chart or equivalent measurements. Ensure compliance with inclusion and exclusion criteria. Audit patient records and refraction documentation consistency.
PIC (Person In charge)	Optometrist, Head of Optometry Unit, Ophthalmology Department Head or any other related appointed person

Performance Indicator 04

Field	Indicator
Indicator Title	Percentage of new patients that were given appointment for refraction procedure within ≤ 6 weeks in Optometry Clinic without Ophthalmologist.
Rationale	This indicator was selected because: Patient care should be given priority by reducing the waiting time to get an appointment for refraction in line with patient centred services (Reference Circular of the Director General of Health Malaysia No. 6/2004).
Definition of Terms	New patient: New referral for refraction. Within ≤ 6 weeks: Time taken from the date of getting an appointment until the appointment date for refraction.
Inclusion and Exclusion Criteria	Inclusion Criteria: All new cases who get a refraction appointment date. Exclusion Criteria: 1. Patients request a later appointment date. 2. Defaulted patient.
Indicator Type	Outcome Based Process Indicator
Formula	$\left(\frac{\text{Number of new cases given the refraction appointment } \leq 6 \text{ weeks at the Optometry Clinic}}{\text{Number of new cases get an appointment for refraction at the Optometry Clinic}} \right) \times 100$
Numerator	Number of new cases given the refraction appointment ≤ 6 weeks at the Optometry Clinic.
Denominator	Number of new cases get an appointment for refraction at the Optometry Clinic.
Target	$\geq 95\%$
Data Collection Frequency	Six-monthly
Tracer Methodology	Review appointment records for new refraction cases. Verify referral date and appointment date interval ≤ 6 weeks. Cross-check scheduling logs and clinic booking system. Validate exclusion cases (requested later date and defaulters). Audit documentation consistency and appointment tracking records.

Field	Indicator
PIC (Person In charge)	Optometrist, Head of Optometry Unit, Clinic Scheduling Officer or any other related appointed person

Performance Indicator 05

Field	Indicator
Indicator Title	Percentage of new patients that were given appointment for diabetic retinopathy screening within ≤ 6 weeks in Optometry Clinic at Klinik Kesihatan.
Rationale	This indicator was selected because: 1. Prevention of blindness at the early stages due to complications of diabetes mellitus can reduce the cost of a patient's treatment. 2. Patient's care should be given priority by reducing waiting time to get an appointment for diabetic retinopathy screening.
Definition of Terms	New patient: New referral for diabetic retinopathy screening. Within ≤ 6 weeks: Time taken from the date of getting an appointment to the date of the appointment of diabetic retinopathy screening is given to patients.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. New cases referred for diabetic retinopathy screening. 2. Patient's visual acuity must be 6/12 or better. Exclusion Criteria: 1. Patients request a later appointment date. 2. Defaulted patients.
Indicator Type	Outcome Based Process Indicator
Formula	$\left(\frac{\text{Number of new cases given appointment for diabetic retinopathy screening } \leq 6 \text{ weeks at the Optometry Clinic at Klinik Kesihatan}}{\text{Number of new cases referred for diabetic retinopathy screening at the Optometry Clinic at Klinik Kesihatan}} \right) \times 100$
Numerator	Number of new cases given appointment for diabetic retinopathy screening ≤ 6 weeks at the Optometry Clinic at Klinik Kesihatan.
Denominator	Number of new cases referred for diabetic retinopathy screening at the Optometry Clinic at Klinik Kesihatan.
Target	$\geq 80\%$
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Review referral records for diabetic retinopathy screening. Verify appointment dates against referral dates to ensure ≤ 6 weeks interval. Cross-check clinic scheduling system and appointment logs. Validate inclusion criteria (visual acuity $\geq 6/12$) and exclusion cases (requested later appointment, defaulted patients). Audit documentation consistency across patient records and clinic registers.
PIC (Person In charge)	Optometrist, Clinic Scheduling Officer, Head of Klinik Kesihatan or any other related appointed person

Performance Indicator 06

Field	Indicator
Indicator Title	Waiting time to see Optometrist within 60 minutes.
Rationale	This indicator was selected because: To ensure the waiting time to get Optometry services is in line with the General Circular Director of Health Malaysia No. 6/2004.
Definition of Terms	Waiting time ≤ 60 minutes: The time calculated from the patient's file/card arrives at the optometrist's room until the patient is called for refraction.
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients were referred for refraction. Exclusion Criteria: NA
Indicator Type	Outcome Based Process Indicator
Formula	$(\text{Number of patients seen by Optometrist for refraction with waiting time} \leq 60 \text{ minutes} \div \text{Number of patients seen by an Optometrist for refraction}) \times 100$
Numerator	Number of patients seen by Optometrist for refraction with waiting time ≤ 60 minutes
Denominator	Number of patients seen by an Optometrist for refraction
Target	≥ 80%
Data Collection Frequency	Six-monthly
Tracer Methodology	Review patient flow records from registration/file arrival time to time called for refraction. Verify timestamps using clinic logs, queue management system, or manual registers. Cross-check sampled patient records to confirm waiting time calculation ≤ 60 minutes. Validate consistency between recorded times and actual service delivery workflow.
PIC (Person In charge)	Optometrist, Clinic Assistant, Registration Counter Staff, Unit Supervisor or any other related appointed person

17H

Service Standard 17H: Allied Health Professional Services – Medical Social Services

**Service Standard 17H: Allied Health Professional Services – Medical Social
Services
Performance Indicator Summary**

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of Early Response Time Taken Within Two (2) Working Days from the Date of Referral	98%	Three-Monthly
02	Percentage of Cases Referred to the Referral Agencies Within Five (5) Working Days After Social Intervention Complete	85%	Three-Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of Early Response Time Taken Within Two (2) Working Days from the Date of Referral
Rationale	This indicator was selected because: Patient-centred services must give priority to prompt attention to patient needs. It is the aim of the MOH to reduce the waiting times to a minimum in line with the Circular of the Director-General of Health Malaysia No. 6/2004-Steps to reduce The Waiting Time in MOH Facilities
Definition of Terms	Patient referred for Medical Social services received intervention within 2 working days.
Inclusion and Exclusion Criteria	Inclusion: 1. Malaysian citizen. 2. All patients referred to the Medical and Social Welfare Department (JKSP). 3. Non-Malaysian citizens involving social legislation or disaster support therapy. Exclusion: 1. Non-Malaysian citizens not meeting eligibility. 2. Weekends or public holidays not included in calculation.
Indicator Type	Rate Based Process Indicator
Formula	$\text{Early Social Work Response Rate} = (\text{Total number of patients who received Medical Social Worker's initial intervention within two (2) working days} \div \text{Total number of patients referred for Medical Social Worker's intervention}) \times 100$
Numerator	Total number of patients who received Medical Social Worker's initial intervention within two (2) working days
Denominator	Total number of patients referred for Medical Social Worker's intervention
Target	98%
Data Collection Frequency	Three-monthly

Field	Indicator
Tracer Methodology	Audit referral logs and intervention records for timestamp match. Confirm date of referral and intervention completion documented. Exclude weekends/holidays in working day calculation.
PIC – Person In charge	Medical Social Worker/Unit Supervisor or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Cases Referred to the Referral Agencies Within Five (5) Working Days After Social Intervention Complete
Rationale	This indicator was selected because: 1. To enable patient to go through the treatment and rehabilitation process accordingly in order to enhance their quality of life and help them to restore their social functioning in community in line to limitation caused by the disease. 2. This indicator reflects the effectiveness of the service and poses a challenge to the Social Medical Worker to deliver the services within the acceptable time frame.
Definition of Terms	Reference agencies include government or non-government agencies: 1. Ministry of Health Malaysia (Tabung Bantuan Perubatan) 2. Department of Social Welfare 3. Royal Malaysian Polic 4. Islamic Religious Department 5. Islamic Religious Council / Zakat Boar 6. Legal Aid Department 7. State Education Department 8. Embassy 9. National Registration Departmen 10. Immigration Department 11. Jabatan Kemajuan Orang Asli (JAKOA) 12. National Cancer Council (MAKNA) 13. Tabung Kebajikan Perubatan Malaysia (TKPM) 14. National Welfare Foundation (YKN) 15. And other reference agencies Social intervention: A method used to provide assistance to the community (individuals, group, communities) that used in the practice of social work to improve the functionality of individuals either through investigation/home visits/supporting documents/inter-agency discussions. Five (5) working days excluding weekend and public holidays. Practical assistance intervention: Involving the aspects of financial assistance (purchasing medical equipment and medicines, funding treatment costs or general assistance), institutional placement and tracing patient's family. These practical assistances are also provided for acute and chronic illness patients.

Field	Indicator
	Support therapy intervention: Involving a consultation, emotional support and crisis interventions including domestic violence cases, unmarried mothers, child abuse and neglect, sexual crimes and other related cases including acute and chronic illness patients.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. All patients who qualify and meet the criteria should be referred to the relevant agency. 2. Inpatient and outpatient. 3. Malaysia citizen. 4. Non-citizen involved in social legislation and disaster cases for support therapy assistance cases only. 5. High-risk neglected baby cases for non-citizen. Exclusion Criteria: 1. Patients who are not eligible and do not meet criteria related to agency. 2. Non-Malaysian citizen.
Indicator Type	Rate-based process indicator
Formula	Referral Completion Rate = (Number of patients referred to agencies within five (5) working days ÷ Number of patients requiring agency referral post-intervention) × 100
Numerator	Number of patients referred to the agencies within five (5) working days after the social intervention had completed
Denominator	Number of patients who need to be referred to agencies after the social intervention had completed
Target	85%
Data Collection Frequency	Three-monthly
Tracer Methodology	Review referral records and social work case closure logs. Confirm intervention end-date and date of referral dispatch. Audit agency response acknowledgment, where applicable.

Field	Indicator
Person In charge (PIC)	Medical Social Worker / Case Coordinator / or any other related appointed person.

171

Service Standard 17I: Allied Health Professional Services – Psychology Counselling Services

**MSQH 7th Edition
Performance Indicator
Manual**

**Service Standard 17I: Allied Health Professional Services – Psychology
Counselling Services
Performance Indicator Summary**

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of New Case Given Counselling Psychology Services Within Three (3) Working Days	70%	Monthly
02	Percentage of Clients Achieved Their Counselling Goal	70%	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of new case given counselling psychology services within three (3) working days
Rationale	This indicator was selected because: This indicator reflects access to Psychology Counselling Services and being effectively discharged from the programme, which poses a challenge to the Psychology Counsellor to deliver the services effectively.
Definition of Terms	Counselling Psychology: General practice and health service provider specialty in professional psychology. It focuses on how people function both personally and in their relationships at all ages. Counselling psychology addresses the emotional, social, school, work and physical health concern people may have at difference stages in their lives, focusing on typical life stresses and issues in which people may struggle as individual and as a part of family, group and organization. Counselling Psychology Services: Help people with physical, emotional and mental health to improve their sense of well-being and alleviate feelings of distress. The scope of counselling psychology practice shall be provided by Psychology Officer (Counselling) appointed by Government of Malaysia There are 2 types of Psychology Officers (Counselling) appointed by government of Malaysia: 1. Psychology Officer (Counselling) who registered with the Malaysian Board of Counsellor (Act 580) 2. Psychology Officer (Counselling) who are not registered with the Malaysian Board of Counsellor (Act 580)
Inclusion and Exclusion Criteria	Inclusion Criteria: All clients registered for Counselling Psychology services. Exclusion Criteria: 1. Clients whom unable to communicate verbal and nonverbal. 2. Clients with severe cognitive impairment. 3. Clients whom are not cooperative. 4. Unreachable clients after 3 times attempts. 5. Clients who refuse counselling psychology services.
Indicator Type	Rate Based Outcome Indicator

Field	Indicator
Formula	$(\text{Number of new cases given counselling psychology services} \div \text{Total number of cases registered for counselling psychology services during the study period}) \times 100$
Numerator	Number of new cases given counselling psychology services
Denominator	Total number of cases registered for counselling psychology services during the study period
Target	70% of new case given counselling psychology services within 3 working days
Data Collection Frequency	Monthly
Tracer Methodology	Review registration logs for new counselling psychology cases and verify service provision dates against registration dates to confirm delivery within 3 working days. Cross-check appointment records, case files, and counselling session documentation. Validate exclusion criteria (communication limitation, cognitive impairment, non-cooperation, unreachable after 3 attempts, refusal). Ensure consistency between recorded service timelines and actual counselling documentation.
PIC (Person In charge)	Psychology Officer (Counselling), Clinic Administrative Staff or any other related appointed person

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of clients achieved their counselling goal
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	Psychology Services: Psychology Services help people with physical, emotional and mental health to improve their sense of well-being and alleviate feelings of distress. The scope of counselling psychology practice shall be provided by Psychology Officer (Counselling) appointed by Government of Malaysia. Counselling Goal: Clients who achieved at least score 2 in SMARTGOAL tool.
Inclusion and Exclusion Criteria	Inclusion Criteria: All clients registered for Counselling Psychology services. Exclusion Criteria: 1. Clients whom unable to communicate verbal and nonverbal. 2. Clients with severe cognitive impairment. 3. Clients whom are not cooperative. 4. Unreachable clients after 3 times attempts. 5. Clients who refuse counselling psychology services.
Indicator Type	Rate Based Process Indicator
Formula	$(\text{Total clients who achieved counselling goal at least score 2} \div \text{Total number of cases registered for counselling psychology services during the study period}) \times 100$
Numerator	Total clients who achieved counselling goal at least score 2
Denominator	Total number of cases registered for counselling psychology services during the study period
Target	70% of total clients to achieve at least score 2 in SMARTGOAL
Data Collection Frequency	Monthly
Tracer Methodology	Review counselling case records and SMARTGOAL assessment documentation to verify achievement of at least score 2. Cross-check client progress notes, session summaries, and outcome evaluation forms. Validate inclusion and exclusion criteria compliance. Ensure

Field	Indicator
	consistency between recorded SMARTGOAL scores and documented counselling outcomes across sampled cases.
PIC (Person In charge)	Psychology Officer (Counselling), Case Management Officer, Head of Unit or any other related appointed person

17J

Service Standard 17J: Allied Health Professional Services – Clinical Psychology Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 17J: Allied Health Professional Services – Clinical Psychology Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of Relapse Cases	Sentinel event	Six-monthly
02	Percentage of Psychological Assessment Completed within 30 working days	85%	Six-monthly
03	Percentage of New Patient Referred for Psychotherapy Session Receiving First Session Within 90 Working Days	80%	Six-monthly
04	Percentage of Psychoeducation Given in the First Session	85%	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of Relapse Cases
Rationale	This indicator was selected because: 1. 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. 2. This indicator reflects clinical effectiveness and poses a challenge to the Clinical Psychologist in striving to deliver the services effectively.
Definition of Terms	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. 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 and Exclusion Criteria	Inclusion: All patients successfully discharged from the Clinical Psychology Services having achieved restoration of psychological fitness. Exclusion: NA
Indicator Type	Sentinel Event Indicator
Formula	$\text{Relapse Rate} = (\text{Number of patients who relapsed after being discharged as psychologically fit} \div \text{Total number of patients discharged as psychologically fit}) \times 100$
Numerator	Number of patients who relapsed after being discharged as psychologically fit
Denominator	Total number of patients discharged as psychologically fit
Target	0% (Sentinel Standard)
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Review discharge records and relapse re-entry logs. Confirm discharge was due to goal achievement (not default/dropout). Verify that recurrence was related to original diagnosis.
PIC – Person In charge	Clinical Psychologist (Lead Officer), Department Head or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Psychological Assessment Completed within 30 working days
Definition of Terms	Psychological Assessment: A structured process involving clinical tools to assess behaviour, personality, cognitive functioning, and emotional status. Completed within 30 working days: From the first date of referral to date of full assessment completion (report finalised).
Inclusion and Exclusion Criteria	Inclusion Criteria: All patients referred to the Clinical Psychologist for consultation and treatment Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	$\text{Assessment Timeliness Rate} = \left(\frac{\text{Number of psychological diagnostic assessment reports completed within 30 working days}}{\text{Total number of psychological diagnostic assessment cases completed}} \right) \times 100$
Numerator	Number of psychological diagnostic assessment reports completed within 30 working days.
Denominator	Total number of psychological diagnostic assessment cases completed
Target	85%
Data Collection Frequency	Six-monthly
Tracer Methodology	Audit referral registers and compare with final assessment report date. Ensure working day calculation excludes weekends/public holidays. Check that completion includes full documentation.
PIC – Person In charge	Clinical Psychologist or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of New Patient Referred for Psychotherapy Session Receiving First Session Within 90 Working Days
Rationale	This indicator was selected because: 1. Psychotherapy is another main service in clinical psychology field. 2. Clinical psychology clinic receives a significant number of referrals for psychotherapy cases.
Definition of Terms	Psychotherapy Session: Psychological intervention session for psychiatric disorders, administered as part of treatment plan in managing psychiatric illnesses. It is usually administered in a form of talk therapy, as a way to help patients in managing their symptoms, restoring functions, and increasing their well-being New patient referred for psychotherapy session receives first session within 90 working days: New patient is defined as a new case referred to Clinical Psychology Clinic. Patient will receive his / her first appointment for psychotherapy session within 90 working days, from the date of the referral received at clinic.
Inclusion and Exclusion Criteria	Inclusion: All new cases referred to the Clinical Psychology Clinic for psychotherapy session Exclusion: 1. Patient defaults / refuses to attend first session of psychotherapy. 2. Clinical Psychology Clinic rejects a referral for psychotherapy for a specific reason. 3. Patient is not reachable via clinic's communication platform; hence he / she is not informed with psychotherapy first appointment date. 4. Patient requests a specific date for first appointment, which exceeding 90 working days.
Indicator Type	Rate Based Process Indicator
Formula	$\text{Psychotherapy Referral Rate} = \left(\frac{\text{Number of new patients who attended first psychotherapy session within 90 working days}}{\text{Total number of new patients who attended first psychotherapy session in a specific month}} \right) \times 100$
Numerator	Number of patients who attended their first psychotherapy session within 90 working days

Field	Indicator
Denominator	Total number of new patients who attended first psychotherapy session in a specific month
Target	80%
Data Collection Frequency	Six-monthly
Tracer Methodology	Audit timestamp from referral log and session records. Exclude patient-initiated delays from denominator. Validate date exclusions for public holidays and weekends.
PIC – Person In charge	Clinical Psychologist, Department Coordinator or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	Percentage of Psychoeducation Given in the First Session
Rationale	To orientate patients for psychotherapy sessions
Definition of Terms	Psychotherapy Session: A psychological intervention for mental health conditions, typically structured as talk therapy. Psychoeducation: Refers to the process of educating individuals with mental health conditions, and often their families, about their diagnosis, treatment, and coping strategies.
Inclusion and Exclusion Criteria	Inclusion: All patients referred for psychotherapy Exclusion: Patients referred for psychological assessment
Indicator Type	Rate based process indicator
Formula	$\left(\frac{\text{Total number of psychoeducation completed in the first session}}{\text{Total number of first psychotherapy sessions in that month}} \right) \times 100$
Numerator	Total number of psychoeducation completed in the first session
Denominator	Total number of first psychotherapy sessions in that month
Target	85%
Data Collection Frequency	Six-monthly
Tracer Methodology	Audit timestamp from referral log and session records.
PIC – Person In charge	Clinical psychologist, department coordinator or any other related appointed person.

18

Service Standard 18: Pharmacy Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 18: Pharmacy Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of prescription error	0	Monthly
02	Percentage of dispensing error	0	Monthly
03	Average time for a prescription to be dispensed from time received at counter to time medication given to patient	≥ 95% prescription dispensed within 30 minutes	Monthly
04	Number and value of expired drugs at end of month over a specified period	0	Monthly

Performance Indicator 01

Field	Indicator
Indicator title	Percentage of Prescription Error
Rationale	This indicator was selected because: 1. Medication Error is a significant problem in hospitals and has an impact on the safety of patients. The large number 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. 2. It is an indicator of the delivery of safe patient care in the hospital.
Definition of Terms	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. 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 and Exclusion Criteria	Inclusion Criteria: All prescriptions made out for patients (in-Patient and Out- Patients) Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator

Field	Indicator
Formula	(Number of prescription errors (out-patients and in-patients) / Total number of prescriptions (outpatients and Inpatients) written by doctors) × 100%
Numerator	Number of prescription errors (out-patients and in-patients)
Denominator	Total number of prescriptions (outpatients and Inpatients) written by doctors
Target	0
Data Collection Frequency	Monthly
Tracer Methodology	Random tracer audit of at least 30 prescriptions monthly; verify completeness, legibility, appropriateness, and clinical justification. Compare against reported errors.
Person In charge (PIC)	Head of Pharmacy Services or designated Pharmacist responsible for medication safety reporting or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	Percentage of Dispensing Error
Rationale	This indicator was selected because: 1. Medication Error is a significant problem in hospitals and has an impact on the safety of patients. The large number 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. 2. It is an indicator of the delivery of safe patient care in the hospital.
Definition of Terms	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. Dispensing Error: 1. Dispensing or administration to the patient of medication not authorised by a legitimate prescriber. 2. 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. 3. Dispensing or administration to the patient of a drug product in a different dosage form than that ordered by the prescriber. 4. 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)

Field	Indicator
Inclusion and Exclusion Criteria	Inclusion Criteria: All prescriptions made out for patients (in-Patient and Out- Patients) Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	$\frac{\text{(Number of dispensing errors (out-patients and in-patients))}}{\text{Total number of prescriptions dispensed (outpatients and Inpatients)}} \times 100\%$
Numerator	Number of dispensing errors (out-patients and in-patients)
Denominator	Total number of prescriptions dispensed (outpatients and Inpatients)
Target	0
Data Collection Frequency	Monthly
Tracer Methodology	Monthly incident log review by QPSU Random sampling of dispensing logs Review of MERS reports Interview and retraining audit for involved pharmacists
Person In charge (PIC)	Head of Pharmacy Services; supported by Quality and Patient Safety Unit (QPSU) for audit and incident validation or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	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: 1. Promptness of service is one criterion of quality care. Patient centred service must give priority to reducing waiting time for dispensing. This indicator reflects access and patient centeredness. 2. Long waiting time can adversely affect patient satisfaction
Definition of Terms	Waiting Time: Time when a prescription is received at the pharmacy counter to the time the medication (s) is dispensed to the patient. Dispense: Process of delivering medication to the patient
Inclusion and Exclusion Criteria	Inclusion Criteria: All prescriptions received from the Outpatient Pharmacy Department /Specialist Clinic/Follow up Clinic Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numerator / Denominator
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	≥ 95% prescription dispensed within 30 minutes
Data Collection Frequency	Monthly
Tracer Methodology	Timestamp audit using pharmacy queue management system Random clock-verification via patient shadowing. Monthly audit of outlier cases Pharmacist interviews for systemic delay insights.
Person In charge (PIC)	Chief Pharmacist; supported by pharmacy floor supervisors or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator title	Number and value of expired drugs at end of month over a specified period
Rationale	This indicator was selected because: 1. 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. 2. To reflect the efficiency of the pharmaceutical services.
Definition of Terms	Value of Expired Drugs: The cost of the drugs at the time of purchase.
Inclusion and Exclusion Criteria	Inclusion Criteria: All expired drugs in stock at the end of the month over a specified period. Exclusion Criteria: NA
Indicator Type	Number and Value (cost)
Formula	Numerator / Denominator
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.
Denominator	NA
Target	0
Data Collection Frequency	Monthly
Tracer Methodology	Monthly inventory checks against expiry logs Spot audits at ward, satellite, and cold chain storage Cross-check with disposal forms (for destruction or quarantine batches) Sampling of expiry-tagged items vs. actual shelf status
Person In charge (PIC)	Chief Pharmacist; oversight by Pharmacy Inventory Control Officer or any other related appointed person.

19

Service Standard 19: Sterilising Supply Services (SSS)

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 19: Sterilising Supply Services (SSS) Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of sterile instrument sets rejected	< 5%	Monthly
02	Percentage of incidents reported monthly that have had root cause analysis (RCA) done and action taken to prevent recurrence	100%	Monthly
03	Internal customer feedback	>80%	Six-monthly
04	Leak testing for rigid container system to ensure sterility	100%	Three-monthly

Performance Indicator 01

Field	Indicator
Indicator title	Percentage of sterile instrument sets rejected
Rationale	This indicator was selected because: 1. 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). 2. This indicator reflects the efficiency of the Central Sterile Supply Services.
Definition of Terms	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 instrument sets could cause disruptions in surgical procedures and cost for the facility due to: 1. Breach in the integrity of sterility 2. Incomplete sets 3. Use of poor packaging material
Inclusion and Exclusion Criteria	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
Indicator Type	Rate Based Output Indicator
Formula	$\left(\frac{\text{Total number of reject sterile instrument sets in a month}}{\text{Total number of instrument sets sterilized in a month}} \right) \times 100\%$
Numerator	Total number of reject sterile instrument sets in a month
Denominator	Total number of instrument sets sterilized in a month
Target	< 5%
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Random review of sterilisation logs and batch tracking. Validation of rejected sets with photographic evidence. Feedback from Operating Theatre and Wards on incomplete or compromised trays. RCA if trend exceeds threshold for two (2) consecutive months.
Person In charge (PIC)	CSSD Manager/Infection Control Lead or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator title	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: 1. 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). 2. 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	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. 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 and Exclusion Criteria	Inclusion Criteria: All types of incidents needing RCA reported and documented Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	$\left(\frac{\text{Number of incidents reported and where Root Cause Analysis is done and actions taken in the month}}{\text{Total number of incidents reported in the month}} \right) \times 100\%$
Numerator	Number of incidents reported and where Root Cause Analysis is done and actions taken in the month
Denominator	Total number of incidents reported in the month

Field	Indicator
Target	100%
Data Collection Frequency	Monthly
Tracer Methodology	Incident report review from CSSS e-log or IR2 system. Cross-verification of RCA completion checklist and documented CAPA. Interview with RCA team leader. Sampling of action plan implementation logs.
Person In charge (PIC)	CSSD Manager and Quality Improvement Lead with RCA-trained personnel assigned per event, or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator title	Internal Customer feedback
Rationale	This indicator was selected because: 1. 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). 2. This indicator reflects the efficiency of the Central Sterile Supply Services
Definition of Terms	1. Customer satisfaction survey is a measure of providing exemplary service requires the consistent delivery of safe, high-quality products and services. 2. To obtain feedback from the end-user pertaining to the services of CSS provided to help the department to improve their services.
Inclusion and Exclusion Criteria	Inclusion Criteria: Customer who participate in customer satisfaction survey Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	$\left(\frac{\text{Number of participating customers who indicated they were satisfied in the customer survey within } > 80\% \text{ satisfaction level}}{\text{Total number of customers who participate in the customer satisfaction survey}} \right) \times 100\%$
Numerator	Number of participating customers who indicated they were satisfied in the customer survey within > 80% satisfaction level
Denominator	Total number of customers who participate in the customer satisfaction survey
Target	> 80% customer satisfaction level
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Feedback form review (scoring rubric + narrative comments). Stakeholder interview from high-utilisation zones. Comparative score trending over two (2) cycles
Person In charge (PIC)	CSSD Manager or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator title	Leak testing for rigid container system to ensure sterility
Rationale	This indicator was selected because: 1. 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. 2. This indicator reflects sterilization achieved post all instruments set that has been sterilized in a container for OT use. 3. Check the condition of containers used for sterilization that is effective to maintain sterility of product post sterilisation
Definition of Terms	Leak testing is the process of checking the containers used for leaks (a defect). Leak testing can be achieved using various leak detection methods and is employed to test for defects in the container casing seal which if it is broken or eroded will compromise the sterilisation of the instruments.
Inclusion and Exclusion Criteria	Inclusion Criteria: All containers used for instruments sterilisation Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	$\left(\frac{\text{Number of containers found with leak}}{\text{Number of containers tested}} \right) \times 100\%$
Numerator	Number of containers found with leak
Denominator	Number of containers tested
Target	100%
Data Collection Frequency	Three-monthly
Tracer Methodology	Audit of leak test records and maintenance logs. Physical verification of rigid container seals. Maintenance calibration record review for testing devices. Interview with CSSD staff.

Field	Indicator
Person In charge (PIC)	Sterile Services Supervisor/Engineering Maintenance Technician with validation by CSSD Manager or any other related appointed person.

20

Service Standard 20: Housekeeping Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 20: Housekeeping Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Trend of performance score during in-house inspection/joint inspection	80% with minimum score of 3	Monthly
02	Facility users feedback survey	80% satisfaction level	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Trend of performance score during in-house inspection/joint inspection
Rationale	This indicator was selected because: 1. 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). 2. 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	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. Performance Score: 1 = Poor 2 = Fair 3 = Good 4 = Excellent 5 = non-applicable
Inclusion and Exclusion Criteria	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
Indicator Type	Process Based Indicator
Formula	Performance trend showing 80% with minimum score of 3 for cleansing service in all areas of the Facility
Numerator	Performance trend showing 80% with minimum score of 3 for cleansing service in all areas of the Facility
Denominator	NA

Field	Indicator
Target	80% with minimum score of 3
Data Collection Frequency	Monthly
Tracer Methodology	Review in-house/joint inspection reports. Verify scoring sheets for each area of the facility. Cross-check compliance with minimum score requirement (≥ 3). Audit trend analysis records over the reporting period. Interview housekeeping staff and supervisors on inspection and scoring processes.
PIC – Person In charge	Housekeeping Manager / Facility Management Unit or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Facility users feedback survey
Rationale	This indicator was selected because: 1. 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 2. 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 AND Exclusion Criteria	Inclusion Criteria: All out-patients and in- patients Exclusion Criteria: NA
Indicator Type	Patient Satisfaction Survey
Formula	Number of patient satisfaction surveys done every six (6) months with 80% satisfaction level
Numerator	Number of patient satisfaction surveys done every six (6) months with 80% satisfaction level
Denominator	NA
Target	80% satisfaction level
Data Collection Frequency	Six-monthly
Tracer Methodology	Review completed facility users' satisfaction survey forms. Verify satisfaction scoring. Cross-check number of respondents against survey records. Audit data compilation and reporting process. Interview staff managing survey distribution and analysis.
PIC – Person In charge	Housekeeping Manager / Facility Management Unit or any other related appointed person.

21

Service Standard 21: Linen and Laundry Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 21: Linen and Laundry Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Percentage of linen shortfall	2%	Monthly
02	Linen rejection rate	< 2%	Monthly
03	Percentage of incidents reported monthly that have had root cause analysis (RCA) done and action taken to prevent recurrence	100%	Monthly
04	Facility user satisfaction survey	80% satisfaction level	Six monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of Linen Shortfall
Rationale	This indicator was selected because: 1. A reliable laundry service is of utmost importance to healthcare facilities. In healthcare facilities, patient comfort and safety depend on a continuous supply of clean linen that is sufficient for the comfort and safety of the patients. 2. The Linen Service is an integral part of the hospital support services to ensure clean Linen Healthcare Acquired Infection (HAI) prevention and control of health and hygiene of both the inpatient and medical staff. 3. 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	Hospital Linen: The term 'hospital linen' includes all textiles used in the hospital including mattress, pillow covers blankets, bed sheets, towels, screens, curtains, doctors' coats etc. The hospital uses these materials in different areas like Operation Theatre, wards, outpatient departments and office areas. Linen Services: Linen Services include the supply and delivery of clean linen and the collection and washing of dirty linen which may be provided from within the Facility or outsourced where linen shortfalls are likely to occur. 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 and Exclusion Criteria	Inclusion Criteria: All types of linen used in the Healthcare Facility i.e. patients' linen, bed covers, linen for drapes and procedures etc. Exclusion Criteria: NA
Indicator Type	Rate Based Outcome Indicator
Formula	$\frac{\text{Total quantity of Linen by types (bed sheet, patients pyjamas, bedcovers, etc) and par levels actually supplied to the Facility in a month}}{\text{Total quantity of Linen by types (bed sheet, patients pyjamas, bedcovers, etc) and par levels agreed to be supplied to the Facility in a month}} \times 100\%$
Numerator	Total quantity of Linen by types (bed sheet, patients pyjamas, bedcovers etc) and par levels actually supplied to the Facility in a month

Field	Indicator
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 Frequency	Monthly
Tracer Methodology	Review linen inventory records and delivery logs. Verify actual linen supplied against agreed par levels. Audit ward and department linen distribution records. Cross-check discrepancies and shortages reported. Interview linen services staff on supply and monitoring processes.
PIC – Person In charge	Linen Services Manager / Housekeeping Supervisor / Facility Management Unit or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Linen Rejection Rate
Rationale	This indicator was selected because: 1. 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. 2. 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). 3. 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	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. Linen Rejection: Washed linen upon delivery maybe rejected by the facility for various reasons i.e. odour, torn, stained, torn etc.
Inclusion and Exclusion Criteria	Inclusion Criteria: All types of washed hospital linen upon delivery that does not comply with the set standards of clean linen Exclusion Criteria: NA
Indicator Type	Rate Based Output Indicator
Formula	$\frac{\text{Total quantity of Linen by weight and types (bed sheet, patients pyjamas, bed covers etc.) rejected by the Facility in a month}}{\text{Total quantity of Linen by weight and types (bed sheet, patients pyjamas, bedcovers etc.) supplied to the Facility in a month}} \times 100\%$
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
Target	< 2%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review linen delivery and rejection logs. Verify rejected items against quality standards. Audit documentation for reasons of rejection (odour, torn, stained). Cross-check quantities rejected versus supplied. Interview staff handling linen inspection and acceptance.
PIC – Person In charge	Linen Services Manager / Housekeeping Supervisor or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	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: 1. 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. 2. 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	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. 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. 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
Inclusion and Exclusion Criteria	Inclusion Criteria: All types of incidents needing RCA reported and documented within a specified period Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Total number of incidents reported for which Root Causes Analysis is done and actions taken in a month ÷ Total number of incidents reported in a month × 100%
Numerator	Total number of incidents reported for which Root Causes Analysis is done and actions taken in a month.
Denominator	Total number of incidents reported in a month
Target	100%

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review incident reporting logs and RCA documentation. Verify completion of RCA for reported incidents. Cross-check action plans and evidence of implementation. Audit timelines of RCA completion. Interview staff involved in incident reporting and RCA processes.
PIC – Person In charge	Linen service manager / Department Head / RCA Team Lead or any related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	Facility User Satisfaction Survey
Rationale	This indicator was selected because: 1. 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). 2. 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	Facility's facility user: 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. Satisfaction Survey: facility user 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 and Exclusion Criteria	Inclusion Criteria: All staff/clients handling the Facility's Linen and Laundry Services and participates in the facility user Customer Satisfaction Survey Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Number of participating facility user Customers indicating they were "satisfied" in the customer satisfaction survey ÷ Total number of facility user Customers who participated in the Customer Satisfaction Survey × 100%
Numerator	Number of participating facility user Customers indicating they were "satisfied" in the customer satisfaction survey
Denominator	Total number of facility user Customers who participated in the Customer Satisfaction Survey
Target	80% satisfaction level
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Review completed facility user Customer Satisfaction Survey forms. Verify satisfaction scoring. Cross-check number of respondents against participation records. Audit data compilation and reporting process. Interview staff involved in survey distribution and analysis.
PIC – Person In charge	Linen Services Manager / Housekeeping Supervisor / Quality Unit or any related appointed person.

22

Service Standard 22: Food Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 22: Food Services Performance Indicator Summary

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

Field	Indicator	Target	Reporting Frequency
01	Percentage of ready to serve food tested negative for pathogenic microorganism as per schedule	100%	Three monthly
02	Occurrence of hazardous physical contamination of food served to patients	Sentinel Event	Monthly
03	Client Food Satisfaction survey	>90% satisfaction level	Six monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Percentage of ready to serve food tested negative for pathogenic microorganism as per schedule
Rationale	This indicator was selected because: 1. This indicator reflects the safety of the Healthcare Facility's Food Services for in-patients' consumption. 2. 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	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. 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. 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 and Exclusion Criteria	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
Indicator Type	Rate Based Process Indicator
Formula	$\frac{\text{Number of samples of ready to serve food (cooked and freshly cut) for in-patients tested negative for pathogenic micro-organism}}{\text{Total number of samples (6-10) of ready to serve food (cooked and freshly cut) for in-patients tested for pathogenic micro-organism}} \times 100$
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

Field	Indicator
Target	100%
Data Collection Frequency	3 monthly
Tracer Methodology	Review laboratory test reports for microbiological results. Verify sampling logs against schedule (every three (3) months). Cross-check number of samples collected (6-10) with documentation. Audit food preparation, handling, and transport records. Interview food service staff on adherence to food safety procedures.
PIC – Person In charge	Food Services Manager / Dietitian / or any related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Occurrence of hazardous physical contamination of food served to patients
Rationale	This indicator was selected because: 1. This indicator reflects the safety of the Food and Dietary Services for patient's consumption. 2. 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 and Exclusion Criteria	Inclusion Criteria: Food prepared for all inpatients/on call staff Exclusion Criteria: Micro-organisms and toxic chemicals.
Indicator Type	Sentinel Event
Formula	Number of Occurrences of Hazardous Physical Contamination of Food during the study period
Numerator	Number of Occurrences of Hazardous Physical Contamination of Food during the study period
Denominator	
Target	Sentinel Event
Data Collection Frequency	Monthly
Tracer Methodology	Review incident reports and food contamination logs. Verify documentation of contamination events. Audit food preparation, handling and transport processes. Interview food service staff and review corrective actions taken.
PIC – Person In charge	Food Services Manager / Dietitian or any related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Client Food Satisfaction survey
Rationale	This indicator was selected because: 1. 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. 2. This survey is a proxy measurement of Patient- Centred Services and Client Satisfaction level on the Food Services. 3. Client satisfaction survey is one of the tools that can be used in recognizing areas for improvement in the Food Services.
Definition of Terms	Hospital Client: Refers to all in- patients provided Food Services during their course of admission in the Hospital 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 and Exclusion Criteria	Inclusion Criteria: All in- patients in all wards/ units of the Facility Exclusion Criteria: NA
Indicator Type	Rate Based Process Indicator
Formula	Numbers of Client Food Satisfaction Survey Feedback with 80% satisfaction level ÷ Total number of clients that participated in the Client Food Satisfaction Survey × 100 %
Numerator	Numbers of Client Food Satisfaction Survey Feedback with 80% satisfaction level
Denominator	Total number of clients that participated in the Client Food Satisfaction Survey
Target	>90% satisfaction level
Data Collection Frequency	Six-monthly

Field	Indicator
Tracer Methodology	Review completed Client Food Satisfaction Survey forms. Verify scoring of satisfaction level ($\geq 80\%$). Cross-check total respondents against survey distribution records. Audit data entry and aggregation process. Interview staff managing survey collection and analysis.
PIC – Person In charge	Food Services Manager / Dietitian / or any related appointed person.

23

Service Standard 23: Forensic Medicine Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 23: Forensic Medicine Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Turnaround Time of ≤ 3 Hours for Releasing Bodies (Non-Police Cases) to the Next of Kin/Claimant After Body Registration	$\geq 80\%$	Monthly
03	Percentage of Completion of Post-Mortem Report for Non-Complicated Cases Within 12 Weeks from Date of Post-Mortem	$\geq 85\%$	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Turnaround Time of ≤ 3 Hours for Releasing Bodies (Non-Police Cases) to the Next of Kin/Claimant After Body Registration
Rationale	This indicator was selected because: 1. 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 and Exclusion Criteria	Inclusion Criteria: Bodies of all cases requiring no post-mortem. Exclusion criteria: NA
Indicator Type	Rate-based process indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100\%$
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
Denominator	Total number of bodies received (non-medico-legal cases) in the mortuary during the month
Target	≥ 80%
Data Collection Frequency	Monthly
Tracer Methodology	Review of mortuary body registration records and body release logs. Auditor to verify time of body registration against time of release to

Field	Indicator
	next of kin/claimant for all non-medico-legal cases in the reporting period. All eligible cases to be reviewed.
Person In charge (PIC)	Head of Forensic Services / Forensic Officer in charge / or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Percentage of Completion of Post-Mortem Report for Non-Complicated Cases from the Date of Post-Mortem within Twelve (12) Weeks
Rationale	This indicator was selected because: 1. This indicator reflects the efficiency of the Forensic Services and timeliness for post-mortem reports for non-complicated cases.
Definition of Terms	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. 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 and Exclusion Criteria	Inclusion Criteria: All non-complicated cases requiring post-mortem. Exclusion Criteria: NA
Indicator Type	Rate-based process indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100\%$
Numerator	Number of post-mortem reports completed within twelve (12) weeks from date of post-mortem for non-complicated cases
Denominator	Total number of post-mortems performed for non-complicated cases within the month
Target	$\geq 85\%$

Field	Indicator
Data Collection Frequency	Monthly
Tracer Methodology	Review of mortuary and forensic pathology records. Auditor to verify date of post-mortem against date of report completion for all non-complicated cases in the reporting period. All eligible cases to be reviewed.
Person In charge (PIC)	Head of Forensic Pathology / Forensic Pathologist in charge / Mortuary Officer / or any other related appointed person.

23A

Service Standard 23A: Mortuary Services

MSQH 7th Edition
Performance Indicator
Manual

Service Standard 23A: Mortuary Services Performance Indicator Summary

There is tracking and trending of the following specific performance indicator:

Field	Indicator	Target	Reporting Frequency
01	Turnaround Time of ≤ 3 Hours for Releasing Bodies (Non-Police Cases) to the Next of Kin/Claimant After Body Registration	$\geq 80\%$	Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Turnaround Time of ≤ 3 Hours for Releasing Bodies (Non-Police Cases) to the Next of Kin/Claimant After Body Registration
Rationale	This indicator was selected because: 1. 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 and Exclusion Criteria	Inclusion Criteria: Bodies of all cases requiring no post-mortem. Exclusion criteria: NA
Indicator Type	Rate-based process indicator
Formula	$(\text{Numerator} \div \text{Denominator}) \times 100\%$
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
Denominator	Total number of bodies received (non-medico-legal cases) in the mortuary during the month
Target	≥ 80%
Data Collection Frequency	Monthly
Tracer Methodology	Review of mortuary body registration records and body release logs. Auditor to verify time of body registration against time of release to

Field	Indicator
	next of kin/claimant for all non-medico-legal cases in the reporting period. All eligible cases to be reviewed.
Person In charge (PIC)	Head of Mortuary Services / Mortuary Officer in charge / or any other related appointed person.

25

Service Standard 25: Medical Assistant Services

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 25: Medical Assistant Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Number of Fire Drills and Tabletop Exercises Conducted 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 six [6] months)	Fire Drill: 100% of planned Tabletop: 100% of planned	Fire Drill: Annually Tabletop: Every 6 months
02	Dispatch and Ambulance Preparedness for Primary Responses Within Five (5) Minutes	≥90%	Monthly
03	Percentage of Medical Assistants (MAs) in Emergency Services Trained in Advanced Life Support (ALS)	Non-specialist: ≥30% Specialist: ≥50%	Six-monthly
04	Percentage of Medical Assistants (MAs) with Post Basic Qualification and Advance Training in Relevant Disciplines	≥40%	Six-monthly
05	Peak Flow Rate (PEFR) Implementation for Asthma Patients in Asthma Bay by Medical Assistants (MAs)	>80%	Monthly
06	Percentage of Medical Assistants (MAs) with Post Basic Qualification Assigned to Relevant Specialization Unit/Department	>80%	Six-monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Number of Fire Drills and Tabletop Exercises Conducted 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 six [6] months)
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: Simulated evacuation involving full staff and response teams. Tabletop Exercise: Role-play discussion scenario simulating emergency decision-making. Multiple Agencies: External responders like <i>Bomba</i> or Red Crescent involved in execution.
Inclusion and Exclusion Criteria	Inclusion Criteria: All buildings and areas under hospital jurisdiction. Exclusion Criteria: NA – applies universally across scheduled zones.
Indicator Type	Rate-Based Process Indicator
Formula	Fire Drill Compliance Rate = (Number of Fire Drills conducted ÷ Number of Fire Drills planned) × 100 Tabletop Exercise Compliance Rate = (Number of Tabletop Exercises conducted ÷ Number of Tabletop Exercises planned) × 100
Numerator	(i) Number of Fire Drills conducted during the year (ii) Number of Tabletop Exercises conducted during the year
Denominator	(i) Number of Fire Drills planned during the year (ii) Number of Tabletop Exercises planned during the year
Target	Fire Drill: 100% of planned Tabletop: 100% of planned
Data Collection Frequency	Fire Drill: Annually Tabletop: Every 6 months

Field	Indicator
Tracer Methodology	Review logbooks, validate photos and debrief notes. Cross-check with agency reports. Interview drill leads and observers.
PIC – Person In charge	Emergency Preparedness Coordinator, Hospital Safety AND Health Officer, MA Supervisor or any appointed related person.

Performance Indicator 02

Field	Indicator
Indicator Title	Dispatch and Ambulance Preparedness for Primary Responses Within Five (5) Minutes
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: Fully equipped and manned ambulance on standby. Dispatch: Departure of ambulance post-call confirmation. Primary Response: First-line urgent call. ≤5 Minutes: Max time between call end and vehicle movement.
Inclusion and Exclusion Criteria	Inclusion Criteria: All emergency primary ambulance calls. Exclusion Criteria: 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.
Indicator Type	Rate-Based Process Indicator
Formula	Ambulance Dispatch Compliance Rate = (Number of primary ambulance dispatches ≤5 minutes ÷ Total primary ambulance calls) × 100
Numerator	Number of primary ambulance dispatches activated within five (5) minutes of call termination
Denominator	Total number of primary response ambulance calls received in the month
Target	≥90% of eligible dispatches within five (5) minutes
Data Collection Frequency	Monthly

Field	Indicator
Tracer Methodology	Audit timestamp logs for dispatch time. Validate readiness rosters. Interview ERT teams. Cross-check incident logs.
PIC – Person In charge	Emergency Dispatcher, Ambulance Unit Leader, MA Supervisor or any appointed related person.

Performance Indicator 03

Field	Indicator
Indicator Title	Percentage of Medical Assistants (MAs) in Emergency Services Trained in Advanced Life Support (ALS)
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): 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.
Inclusion and Exclusion Criteria	Inclusion Criteria: Medical Assistants who is working in the Emergency and Trauma Services for more than 24 months. Exclusion Criteria: 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
Indicator Type	Rate-Based Structural Indicator
Formula	$\text{ALS Trained MA Rate} = (\text{Number of eligible MAs trained in ALS} \div \text{Total number of eligible MAs in Emergency Services}) \times 100$

Field	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
Target	Non-specialist: ≥30% Specialist: ≥50%
Data Collection Frequency	Every 6 months
Tracer Methodology	Check CPD logs, training certs, staff deployment charts. Interview MAs. Audit HR files.
PIC – Person In charge	Emergency Matron, MA Head, CPD Coordinator or any appointed related person.

Performance Indicator 04

Field	Indicator
Indicator Title	Percentage of Medical Assistants (MAs) with Post Basic Qualification and Advance Training in Relevant Disciplines
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. Advanced Training: Formal courses enhancing procedural/clinical skills. Eligible MAs: ≥3 years continuous service in hospital.
Inclusion and Exclusion Criteria	Inclusion Criteria: MAs with ≥3 years working experience. Exclusion Criteria: MAs with <3 years' service.
Indicator Type	Rate-Based Structural Indicator
Formula	Post Basic Training Coverage Rate = (Number of eligible MAs with post basic qualification ÷ Total eligible MAs with ≥3 years' experience) × 100
Numerator	Number of eligible MAs with post basic qualification and advanced training
Denominator	Total number of eligible MAs with ≥3 years' experience
Target	≥40% of eligible MAs
Data Collection Frequency	Every 6 months
Tracer Methodology	Audit training logs and certs. Cross-check HR duration records. Sample CPD files. Interview MAs for recert pathway.
PIC – Person In charge	Head of MA Services, HRD Officer, Hospital CPD Lead or any appointed related person.

Performance Indicator 05

Field	Indicator
Indicator Title	Peak Flow Rate (PEFR) Implementation for Asthma Patients in Asthma Bay by Medical Assistants (MAs)
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	PEFR: Peak Expiratory Flow Rate PEFR before treatment: Reading of Peak Flow Meter Device on patient before treatment is given PEFR after treatment: Reading of Peak Flow Meter Device on patient after treatment is given Asthma Category: 3 categories of asthma condition: Mild, Moderate and Severe Asthma Priority of treatment: Asthma treatment is given according to the severity of asthma
Inclusion and Exclusion Criteria	Inclusion Criteria: Mild asthma cases with both PEFRs documented. Exclusion Criteria: 1. Patient refusal/uncooperative 2. Moderate and 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
Indicator Type	Rate-Based Process Indicator
Formula	$\text{PEFR Implementation Rate} = (\text{Number of asthma patients with pre and post PEFR} \div \text{Total asthma patients treated in Asthma Bay}) \times 100$

Field	Indicator
Numerator	Number of asthma patients with both pre and post PEFR recorded by AMO in Asthma Bay
Denominator	Total number of asthma patients treated in Asthma Bay (mild cases only)
Target	>80% number of all asthma patients with Pre and Post PEFR treated in Asthma Bay
Data Collection Frequency	Monthly
Tracer Methodology	Check PEFR logs in patient files. Validate pre vs. post documentation. Interview AMOs on SOP adherence. Audit monthly logs.
PIC – Person In charge	Asthma Bay AMO, Emergency Matron, or any appointed related person.

Performance Indicator 06

Field	Indicator
Indicator Title	Percentage of Medical Assistants (MAs) with Post Basic Qualification Assigned to Relevant Specialization Unit/Department
Rationale	Post basic qualification is an important element of Continuous Professional Development which is a formal education. The assignment of Medical Assistants with post basic qualifications to their relevant specialization unit or department ensures that clinical expertise is effectively utilized, optimizes patient care quality, and maximizes the return on investment in professional training. Appropriate placement of post-basic trained MAs in relevant specialization settings supports current and latest management of patient care and ensures that skills obtained are applied in the appropriate clinical context.
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. Advanced Training: Formal courses enhancing procedural/clinical skills. Relevant Specialization Unit/Department: The clinical unit or department that corresponds directly to the discipline in which the MA has obtained post basic qualification or advanced training (e.g. MA with post basic in Critical Care assigned to ICU/CCU; MA with post basic in Emergency assigned to Emergency Department). Eligible MAs: All MAs who have obtained a post basic qualification, regardless of years of service.
Inclusion and Exclusion Criteria	Inclusion Criteria: All MAs who have obtained a post basic qualification and are currently employed in the hospital. Exclusion Criteria: MAs without any post basic qualification.
Indicator Type	Rate-based structural indicator

Field	Indicator
Formula	Post Basic Placement Rate = (Number of MAs with post basic qualification assigned to their relevant specialization unit/department ÷ Total number of MAs with post basic qualification) × 100
Numerator	Number of MAs with post basic qualification assigned to their relevant specialization unit/department
Denominator	Total number of MAs with post basic qualification in the hospital
Target	> 80% of MAs with post basic qualification
Data Collection Frequency	Six-monthly
Tracer Methodology	Audit post basic certificates and HR placement records. Cross-check that each MA's assigned unit/department corresponds to the discipline of their post basic qualification. Sample CPD files.
Person In charge (PIC)	Head of MA Services / HRD Officer / Hospital CPD Lead / or any other related appointed person.

26

Service Standard 26: Clinical Research Centre

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 26: Clinical Research Centre Services Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Number of Trainings Conducted per Year	Minimum two (2) training courses per year	Yearly
02	Number of Publications per Year	Minimum two (2) publications annually	Yearly

Performance Indicator 01

Field	Indicator
Indicator Title	Number of Trainings Conducted per Year
Rationale	This indicator was selected as a generic indicator because: 1. 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. 2. 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. 3. 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. Per Year: Calendar year tracking from January to December.
Inclusion and Exclusion Criteria	Inclusion: All CRC-led or co-conducted research training sessions with documented curriculum. Exclusion: Undocumented sessions, informal discussions, or non-training meetings.
Indicator Type	Structural Input Indicator
Formula	CRC Annual Training Count = Total number of training courses on Clinical Research conducted in the Facility during the year
Numerator	Total number of Clinical Research training courses conducted by CRC annually
Denominator	Not applicable (structure-based count)
Target	Minimum two (2) training courses per year
Data Collection Frequency	Yearly

Field	Indicator
Tracer Methodology	Review CRC annual calendar. Validate training logs, reports, and attendance. Cross-check CPD points where applicable.
PIC – Person In charge	CRC Director, Research Officer, CRC Training Coordinator or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Number of Publications per Year
Rationale	This indicator was selected because: 1. 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. 2. Publications on Clinical Research will be an early exposure and encouragement for staff to be involved in research
Definition of Terms	Publication 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. Per Year: January–December publication or official acceptance.
Inclusion and Exclusion Criteria	Inclusion: CRC-led or co-authored published clinical research papers. Exclusion: Abstracts, posters without full publication, unpublished works.
Indicator Type	Structural Output Indicator
Formula	CRC Annual Publication Count = Total number of research publications produced by CRC-affiliated personnel in a calendar year
Numerator	Total number of research publications by CRC-affiliated personnel during the year
Denominator	Not applicable (structure-based count)
Target	Minimum two (2) publications annually
Data Collection Frequency	Yearly
Tracer Methodology	Audit journal DOIs, validate authorship and CRC affiliation. Interview CRC publication team. Confirm journal acceptance dates.

Field	Indicator
PIC – Person In charge	CRC Director, Publication Coordinator, Scientific Officer or any other related appointed person.

27

Service Standard 27: Deceased Organ and Tissue Donation and Promotion

**MSQH 7th Edition
Performance Indicator
Manual**

Service Standard 27: Diseased Organ and Tissue Donation and Promotion Performance Indicator Summary

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

PI No	Indicator	Target	Reporting Frequency
01	Increment in rate of referral	> 5 %	Six-Monthly
02	Family approach rate for cardiac death	> 60 %	Six-Monthly
03	Family approach rate for brain death	> 60 %	Six-Monthly
04	Brain Death Testing Rate	> 60 %	Six-Monthly

Performance Indicator 01

Field	Indicator
Indicator Title	Increment in rate of referral
Rationale	1. In Malaysia, the deceased organ donation rate remains critically low, averaging 0.51 donors per million population from 2001-2024. The huge gaps contrast with United States which reported a rate of 38.0 deceased donors per million population in 2020 2. Multiple articles published concluded that optimizing referral sources can significantly impact donor conversion rate. By focusing on improving referral Malaysia can work towards bridging the gaps in organ donation rates. 3. Increment rate of referral is important KPI of quality care.
Definition of Terms	Brain Death – Death resulting from the irreversible loss of brain function due to severe brain injury (e.g., trauma, stroke, or cancer). Cardiac Death – Death caused by the permanent cessation of heart function. Case referral – All suitable potential Organ/Tissue Donor who at least has been approached for donation.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. The patient is suspected brain death or has developed cardiac death. Suspected brain death is defined as GCS 3/15, intubated and ventilated, fixed and dilated pupils, and treatment is futile (GIFT Protocol). 2. Initial screening indicates suitability for donation, meaning the organs/tissues are in good condition, no evidence of untreatable systemic infection and free from active cancer. Exclusion Criteria: 1. Patients with HIV. 2. Patient malignancy other than primary brain tumor and non-melanotic skin cancers basal cell carcinoma and treated cancer >5 years. 3. Cases in which the cause of death cannot be established or ascertained.
Indicator Type	Rate-based process indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100$
Numerator	Total number of current referral cases (current year)

Field	Indicator
Denominator	Total number of referral cases from the previous year
Target	> 5 %
Data Collection Frequency	Monthly
Tracer Methodology	Where: Critical care areas (ICU, Neuro ICU, HDU, CCU, Pediatric ICU), Emergency Department (ED), Forensic Department, General Wards. Who: UPOH Officers (Head of Unit, Medical Officers, Paramedics). How to Collect: Active and passive case detection through proactive daily rounds. Who Should Verify: The Head of UPOH must verify the form.
PIC – Person In charge	<i>Unit Perolehan Organ Hospital</i> (UPOH) Officers (Head of Unit, Medical Officers, Paramedics) or any other related appointed person.

Performance Indicator 02

Field	Indicator
Indicator Title	Family approach rate for cardiac death
Rationale	1. The family approach rate plays a crucial role in increasing actual organ donors, as evidenced by data from the National Transplant Procurement Management Unit. Data shows that more family approaches lead to higher actual donors. The increase in family discussions from 359 (2023) to 522 (2024) contributed to a 79% rise in actual donors. 2. Countries with high donation rates have standardized family approach protocols. Encouraging trained healthcare professionals to conduct discussions improves authorization rates. 3. A family approach rate is a justified and strategic measure to maximize the utilization of potential donors, address existing disparities, and ultimately increase organ donation rates.
Definition of Terms	Cardiac Death: Death caused by the permanent cessation of heart function. Family approach: Deceased next of kin/family interviewed for organ or tissue donation.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. The patient has developed cardiac death 2. Initial screening indicates suitability for donation, meaning the organs/tissues are in good condition, no evidence of untreatable systemic infection and free from active cancer. Exclusion Criteria: 1. Patients with HIV. 2. Patient malignancy other than primary brain tumor and non-melanotic skin cancers basal cell carcinoma and treated cancer >5 years. 3. Cases in which the cause of death cannot be established or ascertained.
Indicator Type	Rate-based process indicator
Formula	$\text{Numerator} \div \text{Denominator} \times 100$
Numerator	Total number of family approaches.
Denominator	Total number of medically suitable cardiac deaths.

Field	Indicator
Target	> 60 %
Data Collection Frequency	Monthly
Tracer Methodology	Where: Critical care areas (ICU, NeuroICU, HDU, CCU, Paediatric ICU), Emergency Department (ED), Forensic Department, General Wards. Who: UPOH Officers (Head of Unit, Medical Officers, Paramedics). How to Collect: Active and passive case detection through proactive daily rounds. Who Should Verify: The Head of UPOH must verify the form.
PIC – Person In charge	UPOH Officers (Head of Unit, Medical Officers, and Paramedics) or any other related appointed person.

Performance Indicator 03

Field	Indicator
Indicator Title	Family approach rate for brain death
Rationale	1. The family approach rate plays a crucial role in increasing actual organ donors, as evidenced by data from the National Transplant Procurement Management Unit. Data shows that more family approaches lead to higher actual donors. The increase in family discussions from 359 (2023) to 522 (2024) contributed to a 79% rise in actual donors. 2. Countries with high donation rates have standardized family approach protocols. Encouraging trained healthcare professionals to conduct discussions improves authorization rates. 3. A family approach rate is a justified and strategic measure to maximize the utilization of potential donors, address existing disparities, and ultimately increase organ donation rates.
Definition of Terms	Brain Death – Death resulting from the irreversible loss of brain function due to severe brain injury (e.g., trauma, stroke, or cancer). Family approach – Deceased next of kin/family interviewed for organ or tissue donation.
Inclusion and Exclusion Criteria	Inclusion Criteria: 1. The patient is suspected brain death or has developed cardiac death. Suspected brain death is defined as GCS 3/15, intubated and ventilated, fixed and dilated pupils, and treatment is futile (GIFT Protocol). 2. Initial screening indicates suitability for donation, meaning the organs/tissues are in good condition, no evidence of untreatable systemic infection and free from active cancer. Exclusion Criteria: 1. Patients with HIV. 2. Patient malignancy other than primary brain tumor and non-melanotic skin cancers basal cell carcinoma and treated cancer >5 years. 3. Cases in which the cause of death cannot be established or ascertained.
Indicator Type	Rate-based process indicator
Formula	Numerator ÷ Denominator × 100

Field	Indicator
Numerator	Total number of family approaches.
Denominator	Total number of medically suitable brain deaths.
Target	> 60 %
Data Collection Frequency	Monthly
Tracer Methodology	Where: Critical care areas (ICU, NeuroICU, HDU, CCU, Paediatric ICU), Emergency Department (ED), Forensic Department, General Wards. Who: UPOH Officers (Head of Unit, Medical Officers, Paramedics). How to Collect: Active and passive case detection through proactive daily rounds. Who Should Verify: The Head of UPOH must verify the form.
PIC – Person In charge	UPOH Officers (Head of Unit, Medical Officers, Paramedics) or any other related appointed person.

Performance Indicator 04

Field	Indicator
Indicator Title	Brain Death Testing Rate
Rationale	1. Delays in diagnosing brain death can lead to higher incidence of cardiac arrest in potential donors. Studies shown that the loss to cardiac arrest varies from 3.1% to 10% among eligible brain-dead potential donors. 2. The completion of apnea testing, a critical component of brain death assessment, has been associated with higher consent rates for organ donation. 3. By adopting the brain death testing rate is a metric that serves an important measurement of the commitment to optimizing organ donation process.
Definition of Terms	Brain Death – Death resulting from the irreversible loss of brain function due to severe brain injury (e.g., trauma, stroke, or cancer) Potential Organ/Tissue Donor – Any patient who has passed away or is suspected of brain death and appears to be a suitable candidate for organ/tissue donation.
Inclusion AND Exclusion Criteria	Inclusion Criteria: 1. The patient is suspected brain death or has developed cardiac death. Suspected brain death is defined as GCS 3/15, intubated and ventilated, fixed and dilated pupils, and treatment is futile (GIFT Protocol). 2. Initial screening indicates suitability for donation, meaning the organs/tissues are in good condition, no evidence of untreatable systemic infection and free from active cancer. Exclusion Criteria: 1. Patients with HIV. 2. Patient malignancy other than primary brain tumor and non-melanotic skin cancers basal cell carcinoma and treated cancer >5 years. 3. Cases in which the cause of death cannot be established or ascertained.
Indicator Type	Rate-based process indicator
Formula	Numerator ÷ Denominator × 100
Numerator	Total number of brain death tests performed.

Field	Indicator
Denominator	Total number of suspected brain death cases.
Target	> 60 %
Data Collection Frequency	Monthly
Tracer Methodology	Where: Critical care areas (ICU, NeuroICU, HDU, CCU, Paediatric ICU), Emergency Department (ED), Forensic Department, General Wards. Who: UPOH Officers (Head of Unit, Medical Officers, Paramedics). How to Collect: Active and passive case detection through proactive daily rounds. Who Should Verify: The Head of UPOH must verify the form.
PIC – Person In charge	UPOH Officers (Head of Unit, Medical Officers, and Paramedics) or any other related appointed person.

APPENDIX A: Reporting Frequency Reference Guide

The following table defines the standardised reporting frequency cycles used throughout this Performance Indicator Manual. All healthcare facilities are required to align their data collection calendars with these cycles to ensure timely monitoring, governance oversight, and corrective action planning.

Frequency	Cycles/Year	Applicable Context
Monthly	12 times per year	Operational indicators requiring close monitoring and rapid corrective action.
Quarterly	4 times per year	Indicators with measurable trends over 3-month cycles; infrastructure and safety compliance.
Six-Monthly	2 times per year	Outcome-based indicators, satisfaction surveys, and audit-cycle measures.
Yearly	Once per year	Strategic and structural indicators; staff training completion; publication outputs.
Three-Monthly	4 times per year	Used interchangeably with Quarterly for select allied health and support services.

References

- ISQua External Evaluation Association. (2024). *Guidelines and principles for the development of health and social care standards* (6th ed.). ISQua EEA. <https://ieea.ch/wp-content/uploads/2024/09/ISQua-EEA-Guidelines-and-Principles-for-the-Development-of-Health-and-Social-Care-Standards-6th-Edition.pdf>
- Joint Commission International. (2024). *Joint Commission International accreditation standards for hospitals and academic medical centers* (8th ed.). Joint Commission Resources. <https://store.jointcommissioninternational.org/joint-commission-international-standards-for-hospitals-8th-edition/>
- Malaysian Society for Quality in Health. (2022). *MSQH performance indicators: 6th edition*. MSQH. <https://www.msqh.com.my/web/index.php/guidelines/67-msqh-performance-indicators-6th-edition-2022>
- Kementerian Kesihatan Malaysia, Clinical Performance Surveillance Unit. (2021). *Kamus teknikal: Hospital performance indicators for accountability (HPIA) & specific indicators* (Ver. 7.3). Bahagian Perkembangan Perubatan, KKM. <https://jknjohor.moh.gov.my/hsajb/index.php/borang-jabatan-perubatan-transfusi/category/60-kpi-hpia?download=463:hpia-specific-indicators-tech-spec-ver-7-3-2021>
- Kementerian Kesihatan Malaysia, Clinical Performance Surveillance Unit. (2022). *Technical specifications: Hospital performance indicators for accountability (HPIA), Medical Programme*. Bahagian Perkembangan Perubatan, KKM.
- Kementerian Kesihatan Malaysia, Clinical Performance Surveillance Unit. (2023). *Technical specifications: Hospital performance indicators for accountability (HPIA), Medical Programme*. Bahagian Perkembangan Perubatan, KKM. <https://jknpahang.moh.gov.my/hspbentong/index.php/warga-kkm/category/46-kamus-rujukan-hpia-kpi-2023?download=282:hpia-tech-spec-2023>
- Kementerian Kesihatan Malaysia, Clinical Performance Surveillance Unit. (2024). *Kamus rujukan teknikal spesifikasi HPIA/CliSQI/KPI TPKN/KPI Pengarah*. Bahagian Perkembangan Perubatan, KKM.
- Kementerian Kesihatan Malaysia, Clinical Performance Surveillance Unit. (2025). *Technical specifications: Hospital performance indicators for accountability (HPIA), Medical Programme*. Bahagian Perkembangan Perubatan, KKM. https://portal.appshtaa.moh.gov.my/images/ProfilJabatan/Kualiti/HPIA/Clinical_Services_KPI_Technical_Specifications_2025.pdf
- Kementerian Kesihatan Malaysia, Unit Surveilan Pencapaian Klinikal, Cawangan Pengurusan Risiko Dan Survelan Klinikal. (2026). *Technical specifications: Hospital performance indicators for accountability (HPIA) & clinical services quality indicators (CliSQI), Medical Programme*. Bahagian Perkembangan Perubatan, KKM.