# Curriculum

## Diploma of
## Pre-Hospital and Retrieval Medicine

**Developed by**

Australasian College for Emergency Medicine
Australian College of Rural and Remote Medicine
Australian and New Zealand College of Anaesthetists
College of Intensive Care Medicine of Australia and New Zealand
Royal Australian College of General Practitioners

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## Document Review

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# 1. Introduction

## History

The Australasian College for Emergency Medicine (ACEM), Australian College of Rural and Remote Medicine (ACRRM), Australian and New Zealand College of Anaesthetists (ANZCA), College of Intensive Care Medicine of Australia and New Zealand (CICM) and the Royal Australian College of General Practitioners (RACGP) are committed to improving access to rapid response, high level medical care for seriously sick and injured people of Australia and Aotearoa New Zealand.

This commitment acknowledges that medical practitioners who provide pre-hospital and retrieval services require a range of clinical, academic, personal and professional attributes and expertise to deliver these services with confidence and at a consistently high standard. As such, the Diploma of Pre-hospital and Retrieval Medicine (DipPHRM) is for those medical practitioners wishing to undertake a structured education and training program as part of the process of developing their clinical expertise in PHRM.

The education and training program aims to equip medical practitioners for the delivery of high quality health care and outcomes for critically ill and injured patients requiring urgent on-scene medical management or those whose medical needs exceed the facility they are in and require urgent or elective inter-facility transfer.

## Conjoint Committee of Pre-hospital and Retrieval Medicine

The Conjoint Committee of PHRM (CCPHRM) was established in 2019 and is responsible for the implementation and ongoing administration of all aspects of the DipPHRM training rogram. The CCPHRM comprises representatives from ACEM, ACRRM, ANZCA, CICM and RACGP, all of whom are actively and passionately involved in the clinical delivery of PHRM services as part of their regular work.

This multi-College and broad jurisdictional membership is seeking to establish the CCPHRM as the pre-eminent medical group for matters pertaining to PHRM across Australia and New Zealand, to help drive high standards of practice and acknowledging the broad range of pre-hospital and retrieval services and models across the jurisdictions.

The Diploma Curriculum has been developed by athe PHRM Curriculum Expert Reference Group (ERG) with representation from all Colleges in the CCPHRM. The PHRM Curriculum ERG members were nominated by their colleges on the basis of their extensive clinical experience in PHRM, as well as in medical education and training.

## The Pre-hospital and Retrieval Environment

Pre-hospital and retrieval medical practice involves specialist on-location clinical management and safe transport with ongoing medical care of patients from the scene of an accident or emergency to an appropriate health care facility or between two healthcare facilities.

Medical PHRM services utilise a physician as part of the team, to help provide a seamless interface between pre-hospital and hospital care. PHRM services also utilise a range of transport platforms primarily, but not limited to, road and aeromedical (rotary and fixed-wing) assets. Clinical staff must possess specialised medical knowledge as well as technical and non-technical skills and approaches unique to PHRM practice.

This practice includes the care of differentiated and undifferentiated critically ill or injured patients. PHRM practitionersmust be able to apply their expertise in often unpredictable, and sometimes precarious, environments. The breadth and scope of PHRM practice, and the dynamic nature of out-of-hospital work, requires specific training, education and ongoing support of the PHRM workforce to ensure pre-hospital, inter-facility and in-transit critical care needs of patients are met in a consistent and organised manner, and to a high standard.

# 2. Curriculum framework

| Domain | Theme | Subtheme |
|---|---|---|
| 1.0 Medical Expertise | 1.1 The PHRM Context and Environment | 1.1.1 Introduction to PHRM |
| | | 1.1.2 PHRM systems |
| | | 1.1.3 Principles of flight operations |
| | | 1.1.4 Scene safety and awareness |
| | | 1.1.5 Transport safety |
| | | 1.1.6 Transport physiology |
| | | 1.1.7 Working in a transport environment |
| | | 1.1.8 Entrapment and extrication |
| | | 1.1.9 PHRM equipment |
| | | 1.1.10 Complex interdisciplinary tasks |
| | 1.2 Clinical Practice | 1.2.1 Initial assessment, treatment and transport prioritisation |
| | | 1.2.2 Patient packaging |
| | | 1.2.3 Clinical management of the trapped patient |
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| | | 1.2.5 Pre-hospital and retrieval anaesthesia and sedation |
| | | 1.2.6 Invasive life, limb and sight saving procedures |
| | | 1.2.7 Mechanical ventilation and respiratory support |
| | | 1.2.8 PHRM management of the critically injured patient |
| | | 1.2.9 PHRM management of the critically ill patient |
| | | 1.2.10 PHRM management of obstetric emergencies |
| | | 1.2.11 PHRM management of acute behavioural disturbance |
| | | 1.2.12 PHRM management of critically ill or injured paediatric patients |
| | | 1.2.13 PHRM management of neonatal patients by non-neonatal retrieval services |
| | | 1.2.14 PHRM management of the bariatric patient |
| | | 1.2.15 PHRM management of older patients |
| | | 1.2.16 PHRM management of infectious diseases |
| | | 1.2.17 PHRM management of environmental emergencies |
| | | 1.2.18 PHRM management of the dying patient |
| | 1.3 Multi-casualty and Major Incident Management | 1.3.1 Principles of emergency preparedness, response and recovery |
| | | 1.3.2 Operational and tactical response to multi-casualty and major incidents |
| 2.0 Prioritisation and Decision Making | 2.1 Cognition and Decision Making | 2.1.1 Critical thinking and clinical decision making |
| | | 2.1.2 Principles of mindful and reflective practice |
| | | 2.1.3 Strategies for mitigation of cognitive bias |
| 3.0 Communication | 3.1 Communication in the PHRM context | 3.1.1 Principles of successful communication in PHRM |
| | | 3.1.2 Communication processes |
| | | 3.1.3 Communication devices and procedures |

# Curriculum framework (continued)

| Domain | Theme | Subtheme |
|---|---|---|
| 4.0 Teamwork and Collaboration | 4.1 Teamwork | 4.1.1 Principles of teamwork and CRM in the PHRM environment |
| | | 4.1.2 Critical incident debrief |
| 5.0 Management and Leadership | 5.1 Management | 5.1.1 Development and maintenance of a safety culture in PHRM |
| | | 5.1.2 Safety systems in PHRM |
| | | 5.1.3 Adverse events investigation and management |
| | 5.2 Leadership | 5.2.1 Retrieval co-ordination processes |
| | 5.3 Governance | 5.3.1 Audit and quality assurance |
| 6.0 Health Advocacy | 6.1 Support and Access | 6.1.1 Regional and remote health support |
| | | 6.1.2 Cultural competence |
| | | 6.1.3 Recognition and management of psychological risk in PHRM |
| 7.0 Scholarship and Teaching | 7.1 Scholarship | 7.1.1 Research in the PHRM context |
| | | 7.1.2 Evidence-based medicine in the PHRM environment |
| | 7.2 Teaching | 7.2.1 Teaching in the PHRM context |
| 8.0 Professionalism | 8.1 Personal responsibility | 8.1.1 Fitness to practice |
| | | 8.1.2 Commitment to ongoing learning |
| | 8.2 Legalities and Ethics | 8.2.1 Medico-legal frameworks impacting on PHRM practice |
| | 8.3 Media management | 8.3.1 Media management |

# 3. Prerequisites

Due to the nature of PHRM practice, DipPHRM trainees will be expected to have a high level of functional independence, and as such will need to be suitably experienced and advanced in their parent specialty training, with significant and appropriate critical care experience prior to application for the DipPHRM. There is an expectation of a significant degree of prior knowledge and experience carried forward from the trainee's base specialty training into the commencement of training in PHRM.

While there are a broad range of resuscitation and life support courses available, it is expected that independent PHRM practitioners undertaking the Diploma will be developing their skills beyond the basic competence required for many of these. In addition, the curriculum reflects the underpinning knowledge for best practice in pre-hospital and retrieval medicine, which may not always align to guidelines of practice from other respected bodies whose directives may be aimed at an in-hospital model of care.

**This curriculum is not exclusive to adult patients**. Unless otherwise explicitly stated, **learning outcomes apply equally to both paediatric and adult patients**. There are also specific paediatric and neonatal subthemes in this curriculum.

# 4. Training and assessment requirements

| ------ | Requirement | |
|---|---|---|
| **Placement duration** | Minimum 6 months 1.0 FTE | |
| **Task Logbook (LB)** | Daily record of the experience relevant to the training undertaken. | |
| **Training Supervisor's Report (TSR)** | Conducted at 3-monthly intervals throughout training. | |
| **Written examination (Ex(W))** | Multiple-choice, single best answer questions and short answer questions. | |
| **OSPE** | Objective Structured Practical Examination | |
| **Multi-source Feedback Assessment (MSF)** | Four MSF | |
| **Workplace based Assessments (WBAs)** | **2 x Mission Assessment** | + e.g. Targeted patient assessment or management |
| | **3 x DOPS selected from:** | + Prehospital or Retrieval Emergency Anaesthesia*<br>+ Difficult ventilation strategy<br>+ Intra-osseous access<br>+ Management of patient on a transport balloon pump<br>+ Central venous access<br>+ Neonatal/Newborn resuscitation<br>+ Front of neck access airway<br>+ PHRM eFAST<br>+ Resuscitative thoracotomy<br>+ Pelvic trauma management<br>+ Limb/extremity splinting<br>+ Resuscitative Hysterotomy/Caesarean section<br>+ Arterial access and monitoring<br>+ Thoracostomy and/or chest drain insertion<br>+ Lateral canthotomy<br>+ Escharotomy<br>+ Temporary cardiac pacing<br>+ Retrieval amputation<br>**Major haemorrhage management**<br>+ Arterial Tourniquet use<br>+ PPH management including use of uterine balloon tamponade<br>+ Massive GI bleed including use of oesophageal balloon tamponade<br>+ Junctional haemorrhage control<br>+ Maxillofacial haemorrhage control<br>**Advanced airway techniques**<br>+ alternative laryngoscopes<br>+ upper airway topicalisation<br>+ fibreoptic intubation |
| | **3 x CbD** | + e.g., Management of trapped patient, complex ICU transfer, or patient who experiences in-transit deterioration. |
| | **4 x DOTS** | + Transport Monitor/Defibrillator*<br>+ Transport Ventilator*<br>+ Transport Infusion pump /syringe driver<br>+ Portable Ultrasound device<br>+ Handheld/vehicle Radio<br>+ Automatic chest compression device<br>+ Point of care blood testing device<br>+ Neonatal transfer cot<br>+ Vacuum mattress<br>+ Infant T-piece resuscitator (i.e. NeoPuff)<br>+ External Ventricular Drain for transport<br>+ Portable suction<br>+ Scoop stretcher<br>+ Portable blood/fluid warming device |

* mandatory

# 5. Assessment methods

**Task Logbook (LB)**

The Task Logbook enables trainees to maintain a daily record of the experience relevant to the training undertaken. It is used by Training Supervisors and the CCPHRM to monitor trainees' experiences and to ensure they are obtaining adequate clinical exposure to enable them to develop as PHRM physicians and complete the Diploma.

**Training Supervisor Report (TSR)**

Training Supervisor Reports are conducted at 3-monthly intervals throughout training. Training Supervisors may complete these reports in consultation with consultants, paramedic and nursing staff, flight crew and other relevant staff, either informally or via the MSF assessment. The tool is designed to track the trainee's progress against specific learning outcomes in the DipPHRM Curriculum.

**Multi-source Feedback (MSF)**

Multi-source Feedback assessments are completed by those with whom the trainee has worked closely and can provide informed and specific feedback on the trainee's practice and professionalism. Consultants, paramedics, nursing staff, flight crew and other relevant staff may complete these assessments, which are aligned to specific learning outcomes in the DipPHRM curriculum.

**Workplace-based Assessments (WBA)**

The encounters that trainees face every day provide learning experiences that are assessable. The purpose of Workplace-based Assessments (WBAs) is to assess trainees, whenever possible, at the time of doing, in real patient scenarios during normal everyday work. When a trainee is involved in a clinical encounter or performing a procedure that may be assessed, a suitable Assessor utilises the relevant tool to assess the trainee's performance against the standards described for each criterion.

A suitable Assessor is one who has worked with the trainee and who can make a balanced and informed judgement of the trainee's performance. Assessors may be the Training Supervisor or another 'teacher' who has guided and supported the trainee's knowledge and skill development, namely other PHRM consultants or in some circumstances, paramedics, nurses or flight crew, who have been trained and approved by the Training Supervisor to act as Assessors. Training Supervisors will be required to review all assessments on a regular basis to ensure consistency of assessment and that trainee's learning needs are being met.

Embedding this assessment process in the everyday work of trainees formalises the learning opportunities that already exist with each clinical encounter and enhances the overall training experience. The suite of WBAs for the DipPHRM include:

***Mission Assessments (MA)*** These involve the trainee being directly observed by an Assessor whilst undertaking a clinical mission, from predeparture preparation to the completion of transfer at the receiving destination. e.g., Targeted patient assessment or management.

***Case-based Discussions (CbD)*** These are conducted between the trainee and the Assessor after the clinical encounter has taken place. The Assessor rates and provides feedback on the trainee's clinical reasoning in the case. e.g., Management of trapped patient, complex ICU transfer or patient who experiences in-transit deterioration.

**Direct Observation of Procedural Skill (DOPS)** DOPS involve a trainee being observed by an Assessor whilst performing a specific clinical procedure, from the preparation for performing the procedure to post-procedure management.

**Direct Observation of Technical Skill (DOTS)** DOTS involve a trainee being observed by an assesser whilst performing a specific technical skill, and includes the preparation and use of clinical equipment from the commencement of a mission through to post-task handover.

**Examinations**

**Written examination (Ex(W))** The Written Examination consists of multiple-choice, single best answer questions and short answer questions. The pass mark is determined using a rigorous standard setting process.

**Objective Structured Practical Examination (OSPE)** The OSPE will consist of a variety of clinical stations based on scenarios that candidates would expect to see as part of their work in a PHRM setting. Relevant clinical, technical and non-technical skills will be assessed in each station. Stations will consist of reading time, followed by assessment. The pass mark will be determined using a rigorous standard setting process

# 6. Teaching and learning strategies

### Learning Support Resources (LSR)

The PHRM Educational Resources site provides trainees with readily accessible onilne learning support resources. These resources are mapped directly to the learning outcomes articulated in the curriculum, and can be accessed at the trainee's own pace according to their individual needs. The resources will be designed to support educators and Training Supervisors, as well as trainees, and serve as a useful point of reference for appraisal and assessment.

### Supervised Training (ST)

The DipPHRM Training Program follows an apprenticeship model of learning whereby trainees develop the requisite knowledge and skills during everyday work in CCPHRM-accredited sites under the supervision of suitably skilled consultants and other personnel. Training sites utilise models of care and sound rostering practices to ensure trainees are supervised in the workplace appropriate to their level of training and case-mix. Given the nature of PHRM practice, and the limited passenger capacity on various transport platforms, training sites must ensure that there is a rostered consultant for trainees to access when direct clinical supervision is not possible.

### Structured Education Program (SEP)

Structured Education Programs are delivered in accredited training sites by PHRM consultants, flight paramedics, nurses and crew and, where appropriate, other facilitators. The programs reflect adult learning principles, consider different learning styles of trainees and are designed to align with the learning outcomes detailed in the DipPHRM Curriculum and the needs of the trainees. The education program may include simulation-based practical training and should include opportunities for trainees to deliver education and/or facilitate preparation for examinations, as appropriate.

# 7. Key

| Abbreviation | Meaning |
|---|---|
| **LB** | Task Logbook |
| **TSR** | Training Supervisor Report |
| **MSF** | Multi-source Feedback assessment |
| **Ex(W)** | Written examination |
| **OSPE** | Objective Structured Practical Examination |
| **LSR** | Learning Support Resource |
| **ST** | Supervised Training |
| **SEP** | Structured Education Program |

| WBAs | Workplace-based Assessments |
|---|---|
| **MA** | Mission Assessments |
| **CbD** | Case-based Discussion |
| **DOPS** | Direct Observation of Procedural Skill |
| **DOTS** | Direct Observation of Technical Skill |

# Domain 1 Medical Expertise

## 1.1 The PHRM Context and Environment

### *1.1.1 Introduction to PHRM*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.1.1 | Definition of PHRM and commonly used terms related to PHRM. | SEP | Ex(W) |
| 1.1.1.2 | History and evolution of PHRM, including but not limited to;<br>a. Rescue versus retrieval<br>b. Tyranny of distance<br>c. Private NGOs and state-based retrieval services<br>d. Evolution of co-ordination systems and drivers of these<br>e. Evolution of equipment, crewing models and governance in PHRM | SEP | Ex(W) |
| 1.1.1.3 | Basic principles underpinning PHRM practice, including;<br>a. Equity of access to care<br>b. Safety – you, team, scene, patient<br>c. Ability to work in multidisciplinary teams<br>d. Teamwork and communication<br>e. Dynamic leadership and active team membership<br>f. Situational awareness<br>g. Prioritisation of care<br>h. Anticipating and planning<br>i. Transport as a treatment | SEP | Ex(W) |
| 1.1.1.4 | Pre-hospital agencies, including police, fire and rescue, paramedics, volunteer ambulance officers, volunteer rescue agencies (e.g., VRA, SES). | SEP | Ex(W) |
| 1.1.1.5 | Types of missions (e.g. pre-hospital, inter-hospital, rescue, repatriation, international etc.). | SEP | Ex(W) |
| 1.1.1.6 | Role of the doctor in PHRM teams. | SEP | MSF<br>Ex(W) |

### *1.1.2 PHRM Systems*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.2.1 | Triage systems in PHRM co-ordination and management of PHRM resources. | SEP | Ex(W) |
| 1.1.2.2 | Basic risk stratification as applies to PHRM tasking and co-ordination. | SEP | Ex(W) |
| 1.1.2.3 | Commonly used crew-mixes, their source and rationale for deployment within the retrieval system context. | SEP | Ex(W) |
| 1.1.2.4 | Roles of sub-specialised retrieval organisations, (e.g., neonates). | SEP | Ex(W) |
| 1.1.2.5 | Structures of contemporary retrieval systems and their integration within the broader health network (e.g., trauma systems, stroke services, cardiac services, etc.) | SEP | Ex(W) |
| 1.1.2.6 | Integration of PHRM systems with regional/national disaster management systems for mass casualty incidents. | SEP | MSF |

## *1.1.3 Principles of Flight Operations*

| | Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.3.1 | Principles of flight, flight characteristics and forces acting on rotary and fixed wing aircraft. | SEP<br>ST | Ex(W) |
| 1.1.3.2 | Effects of temperature, altitude, weight and balance on the performance of rotary and fixed wing aircraft. | SEP<br>ST | Ex(W) |
| 1.1.3.3 | Rotary and fixed wing aircraft structure, effects of aircraft design on the forces acting on an aircraft and its passengers. | SEP<br>ST | Ex(W) |
| 1.1.3.4 | Relevant pilot considerations within the context of aeromedical operations, with specific regard to:<br>a. weather<br>b. CASA/CAA regulations<br>c. over-water operations<br>d. in-flight emergencies<br>e. sterile cabin<br>f. weight and balance<br>g. passenger compliance<br>h. dangerous goods (e.g., oxygen, patient's belongings)<br>i. communication / airspace<br>j. crew resource management<br>k. instrument and visual flight rules | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.3.5 | Factors that influence landing site decisions. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.3.6 | Basic principles of winching operations. | SEP<br>ST | Ex(W)<br>OSPE |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.1.3.7 | Effectively assess potential landing sites for helicopter operations. | SEP<br>ST | MA<br>Ex(W)<br>OSPE |

## *1.1.4 Scene Safety and Awareness*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.4.1 | Personal safety responsibilities and limitations. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.4.2 | PPE, tools and devices, including helmets, gloves, eye protection, ear protection, life vests, attire, footwear, reflective vests and harnesses. | SEP<br>ST | MSF<br>Ex(W)<br>OSPE |
| 1.1.4.3 | Principles of hazard identification and risk assessment of PHRM environment, including self, scene and survivors. | SEP<br>ST | MSF<br>Ex(W)<br>OSPE |
| 1.1.4.4 | Strategies to optimise the pre-hospital environment, including rescue operations for clinical assessment and care. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.4.5 | Specific hazards identification, assessment and mitigation in complex situations, including but not limited to:<br>a. vehicle collisions<br>b. industrial site incidents<br>c. aircraft-related incidents<br>d. agricultural site incidents<br>e. remote area incidents<br>f. confined space incidents<br>g. collapsed structures<br>h. explosive device incidents<br>i. firearms incidents<br>j. scenes of violent assault<br>k. hazardous materials incidents<br>l. incidents at height<br>m. incidents on steep slopes<br>n. water-related incidents<br>o. fires<br>p. mass casualty incidents<br>q. natural disasters<br>r. terrorist event<br>s. contagious disease<br>t. wilderness environments<br>u. correctional facilities and detention centres<br>v. international jurisdictions<br>w. regions of civil unrest | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.4.6 | Safety and logistical responsibilities of police, fire, medical, specialist rescue and voluntary emergency services at a pre-hospital scene or incident. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.4.7 | Medical capabilities of emergency services at scene, including police, fire, medical, specialist rescue and voluntary emergency services. | SEP<br>ST | Ex(W)<br>OSPE |

## *1.1.4 Scene Safety and Awareness (continued)*

***Independently, be able to:***

| | | | |
|---|---|---|---|
| **1.1.4.8** | Demonstrate effective use of scene safety PPE relevant to the pre-hospital and retrieval environment. | SEP<br>ST | MA<br>CBD<br>MSF<br>Ex(W)<br>OSPE |
| **1.1.4.9** | Demonstrate a dynamic risk assessment in practice at a pre-hospital and/or rescue scene. | SEP<br>ST | MA<br>CBD<br>MSF<br>Ex(W)<br>OSPE |
| **1.1.4.10** | Demonstrate a generic risk assessment for medical personnel supporting a typical rescue operation. | SEP<br>ST | MA<br>CBD<br>MSF<br>Ex(W)<br>OSPE |

## *1.1.5 Transport Safety*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.5.1 | Safety requirements for operating and working with road vehicles, rotary and fixed wing aircraft. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.5.2 | Principles of response vehicle driving, scene arrival and parking at scene. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.5.3 | Response vehicle equipment, safety features and basic maintenance. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.5.4 | Principles of management of motor vehicle collision occurring whilst on task. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.5.5 | Factors affecting night operations and necessary modifications to standard procedures. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.5.6 | Signs of inflight emergencies, including fire, smoke, decompression, lightning strikes, impending impact and pilot incapacitation. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.5.7 | Safety issues and crew responsibilities related to post aircraft impact. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.5.8 | Major structures, restrictions, legislation, security and procedures that are associated with airports, with specific references to differences between airports that influence PHRM operations. | SEP<br>ST | Ex(W)<br>OSPE |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.1.5.9 | Manage inflight emergencies, including:<br>a. Pan and Mayday procedures<br>b. actions in case of pilot incapacitation<br>c. actions in water ditching<br>d. survival strategies in water, extreme cold and extreme heat environments<br>e. actions in case of cabin fire (e.g.; basic fire-fighting with a standard aviation extinguisher)<br>f. actions in case of sudden cabin depressurization<br>g. actions in case of loss of aircraft power | SEP<br>ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 1.1.5.10 | Assess if a response vehicle is safe and appropriate for use in the PHRM context. | SEP<br>ST | MA<br>CBD<br>MSF<br>Ex(W)<br>OSPE |
| 1.1.5.11 | Demonstrate safe movement to and from a response vehicle on tasking, scene arrival and departure. | SEP<br>ST | MA<br>MSF<br>Ex(W)<br>OSPE |
| 1.1.5.12 | Demonstrate aircraft familiarisation and safe movement around an aircraft, with specific reference to hazards, areas to avoid, aircraft shut-down and start-up, emergency exits, emergency equipment locations, evacuation procedures and propeller/rotor safety. | SEP<br>ST | MA<br>MSF<br>Ex(W)<br>OSPE |
| 1.1.5.13 | Correctly operate basic navigation, information management, and incident management equipment. | SEP<br>ST | MA<br>Ex(W)<br>OSPE |

## 1.1.6 Transport Physiology

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.6.1 | Principles of physics underpinning the physiological changes encountered in surface and air transport, and impact on common clinical conditions carried in the transport environment, including gas laws, noise/vibration/harshness, temperature changes, hypoxia, humidity changes, dysbarism and motion-induced sickness. | SEP | Ex(W) |
| 1.1.6.2 | Physiological responses to changes encountered within the transport environment, including the effect of prolonged transfer. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.6.3 | Equipment, processes and techniques to mitigate and manage the effects of the surface and air transport environment on patients, crew and equipment, including turbulence, vibration, G forces, gravity, temperature, hypoxia, altitude, confined space, motion-induced sickness. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.6.4 | Relative advantages and/or disadvantages of PHRM transport platforms in relation to the effects of transport on patients and crew. | SEP<br>ST | Ex(W)OSPE |
| 1.1.6.5 | Situations in which transport by air requires altitudes restrictions. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.6.6 | Limitations of human sensorium in the flight environment and common confounders of the senses. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.6.7 | Proprioceptive, kinaesthetic, visual and auditory changes within the flight environment. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.6.8 | Factors influencing human performance in a transport environment, including but not limited to:<br>a. fitness to fly<br>b. physical fitness<br>c. psychological fitness<br>d. physiology: travel sickness, URTI, noise, vibration<br>e. sleep inertia<br>f. fatigue management | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.6.9 | Effect of positioning and orientation of patients in transport vehicles. | SEP<br>ST | Ex(W)<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.1.6.10 | Assess and manage factors affecting human performance in a transport environment in self and team. | SEP<br>ST | MA<br>Ex(W)<br>OSPE |
| 1.1.6.11 | Manage clinical conditions that are at risk when exposed to turbulence, vibration, G forces, gravity, temperature, hypoxia, altitude, confined space, motion-induced sickness. | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |
| 1.1.6.12 | Recognise, mitigate, avoid and manage hypoxia and 'trapped gas' due to altitude. | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |
| 1.1.6.13 | Demonstrate an ability to integrate patient condition with the potential physical and physiological effects of movement (biodynamics). | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |

## *1.1.7 Working in a Transport Environment*

| | Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.7.1 | Patient transport modalities. | SEP | Ex(W) |
| 1.1.7.2 | The risks versus benefits of various transport modalities for patient transfer. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.7.3 | Constraints and physical limitations of patient transport modalities. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.7.4 | Roles and responsibilities of all staff accompanying the patient during transfer. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.7.5 | Minimum standards for monitoring during transfer. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.7.6 | Interventions which can be undertaken during transfer. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.7.7 | Challenges and limitations of performing clinical interventions during transport. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.7.8 | Principles of work health and safety pertinent to the medical transport environment, including loading/unloading, ergonomics. | SEP<br>ST | Ex(W)<br>OSPE |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.1.7.9 | Effectively manage critically ill or injured patients in a range of transport environments. | SEP<br>ST | MA<br>CBD<br>TSR<br>Ex(W)<br>OSPE |
| 1.1.7.10 | Mitigate the restrictions and potential adverse effects of the transport environment on patient care. | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |

## *1.1.8 Entrapment and Extrication*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.8.1 | The clinician's role at the scene in the support of the rescue capabilities and responsibilities of police, fire, medical, specialist rescue and voluntary emergency services personnel | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.8.2 | Principles of safe extrication and rescue, including the role of medical interventions in facilitating extrication, in the following situations:<br>a. industrial site incidents<br>b. transport-related incidents<br>c. agricultural site incidents<br>d. confined space incidents<br>e. collapsed structures<br>f. incidents at height<br>g. water-related incidents<br>h. fires<br>i. wilderness environments | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.8.3 | The immediate physiological, psychological and physical effects of rescue operations on patients, and rescue and healthcare personnel. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.8.4 | Impacts of clinical urgency on standard and rapid extrication planning. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.8.5 | Factors that influence patient extrication (e.g. medical, physical, psychological). | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.8.6 | Capabilities and limitations of commonly used rescue and extrication equipment. | SEP<br>ST | Ex(W)<br>OSPE |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.1.8.7 | Facilitate extrication through medical intervention. | SEP<br>ST | MA<br>CBD<br>TSR<br>Ex(W)<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.1.8.8 | Rapidly assess the extrication urgency and the clinical priorities of the trapped patient. | SEP<br>ST | MA<br>CBD<br>TSR<br>Ex(W)<br>OSPE |

### *1.1.9 PHRM Equipment*

| | Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.9.1 | Principles of equipment selection in the transport environment. | SEP<br>ST | DOTS<br>Ex(W) |
| 1.1.9.2 | Function, design, utility, limitations and indications for all types of commonly used PHRM medical devices, including devices for:<br>a. airway management<br>b. ventilatory support<br>c. controlling haemorrhage<br>d. accessing circulation<br>e. administering drugs, fluids and blood products<br>f. managing wounds, burns and injuries<br>g. immobilising joints, limbs and patients<br>h. thermoregulation<br>i. point of care testing<br>j. patient monitoring<br>k. invasive patient monitoring<br>l. imaging & diagnosis<br>m. moving & handling patients | SEP<br>ST | DOTS<br>Ex(W) |
| 1.1.9.3 | Principles underpinning the regulation of the carriage of medical devices on aeromedical platforms. | SEP<br>ST | Ex(W) |
| 1.1.9.4 | Principles of transport platform ergonomics withpecific regard to medical equipment set-up and securing. | SEP<br>ST | Ex(W) |
| ***Independantly, be able to:*** | | | |
| 1.1.9.5 | Demonstrate effective vigilance for operation and monitoring of all types of commonly used PHRM medical devices, including the management of failure, alarms and error messages during all phases of patient care. | SEP<br>ST | DOTS<br>Ex(W)<br>OSPE |
| 1.1.9.6 | Manage critical device failures and alarms within all types of commonly used PHRM medical devices. | SEP<br>ST | DOTS<br>Ex(W)<br>OSPE |
| 1.1.9.7 | Supervise set up of commonly used PHRM medical devices. | SEP<br>ST | DOTS<br>Ex(W)<br>OSPE |
| 1.1.9.8 | Demonstrate competent operation of all types of commonly used PHRM medical devices. | SEP<br>ST | DOTS<br>Ex(W)<br>OSPE |

### *1.1.10 Complex Interdisciplinary Tasks*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.1.10.1 | Terminology adopted by other emergency services that are relevant to PHRM practice. | SEP | Ex(W) |
| 1.1.10.2 | The capacity for non-PHRM medical providers to assist in medically or surgically complex inter-hospital retrievals. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.10.3 | Strengths and weaknesses of non-routine transport platforms in medical emergencies. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.1.10.4 | Governance issues related to international retrievals, working with the military and with other NGOs in the PHRM environment. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.1.10.5 | Work effectively as part of a multi-disciplinary team. | SEP<br>ST | MA<br>MSF<br>TSR<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.1.10.6 | Work effectively within the command and control structures and procedures at a pre-hospital scene. | SEP<br>ST | MA<br>TSR<br>OSPE |

## 1.2 Clinical Practice

### *1.2.1 Initial Assessment, Treatment and Transport Prioritisation*

| | Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.1.1 | Limitations of initial tasking information. | SEP<br>ST | Ex(W) |
| 1.2.1.2 | Initial scene survey and exit strategy in the PHRM environment. | SEP<br>ST | Ex(W) |
| 1.2.1.3 | Initial patient assessment in the PHRM environment, including:<br>a. handover<br>b. identification of immediate life threats<br>c. patient assessment: primary and secondary survey<br>d. initial observations and investigations<br>e. synthesis and communication of clinical picture | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.1.4 | Factors impacting clinical assessment of patients in the PHRM environment. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.1.5 | Prioritisation and timelines of care in the PHRM environment. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.1.6 | Initial patient management in the PHRM environment, including:<br>a. management of immediate life threats<br>b. adapting the environment and resources<br>c. appropriate resuscitation and monitoring<br>d. rationalisation of therapeutic interventions<br>e. appropriate analgesia | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.1.7 | Diagnostic and ongoing therapeutic requirements of the critically ill or injured PHRM patient, relevant to the clinical condition. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.1.8 | Initial and ongoing monitoring requirements of the critically ill or injured PHRM patient, relevant to the clinical condition. | SEP<br>ST | Ex(W)<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.2.1.9 | Identify and manage immediate life threats for patients in the PHRM environment. | SEP<br>ST | MA<br>CBD<br>MSF<br>Ex(W) |
| 1.2.1.10 | Conduct an appropriate, targeted patient assessment and communicate the key findings to the team. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>Ex(W) |

## *1.2.1 Initial Assessment, Treatment and Transport Prioritisation (continued)*

| | | | |
|---|---|---|---|
| **1.2.1.11** | Interpret previously performed investigations, including radiological imaging, blood tests, ECGs, as is relevant to ongoing patient management and disposition. | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |
| **1.2.1.12** | Adapt the management of the PHRM patient in the context of initial diagnostic uncertainty or altered diagnosis. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>Ex(W)<br>OSPE |
| **1.2.1.13** | Communicate the urgency of the patient's condition to the receiving team/ facility and help direct subsequent initial investigative and management strategies appropriately. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>Ex(W)<br>OSPE |
| **1.2.1.14** | Identify the most appropriate transport platform for the patient's injury or illness. | SEP<br>ST | CBD<br>Ex(W)<br>OSPE |
| **1.2.1.15** | Identify the most appropriate receiving facility on the basis of the patient's diagnosis, clinical condition and within transport limitations. | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |
| **1.2.1.16** | Plan ahead within the PHRM team for deterioration and contingencies. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>Ex(W)<br>OSPE |
| **1.2.1.17** | Communicate effectively with patients and their family during clinical assessment. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>Ex(W)<br>OSPE |

### *1.2.2 Patient Packaging*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.2.1 | Principles of safe movement and handling. | SEP<br>ST | Ex(W) |
| 1.2.2.2 | Patient packaging as a treatment modality. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.2.3 | Packaging strategies to minimise environmental risks to patient, including:<br>a. reduced barometric pressure<br>b. temperature extremes<br>c. noise and vibration<br>d. acceleration, deceleration and turbulence | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.2.4 | Specific packaging needs of patients with special circumstances, including paediatric patients, patients with EVD, chest drain, VAC dressings. | SEP<br>ST | Ex(W)<br>OSPE |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.2.5 | Package and care for the unconscious patient. | SEP<br>ST | DOTS<br>MA<br>CBD<br>TSR<br>Ex(W)<br>OSPE |
| 1.2.2.6 | Package in anticipation of patient deterioration and possible required interventions. | SEP<br>ST | DOTS<br>MA<br>CBD<br>MSF<br>TSR<br>Ex(W)<br>OSPE |
| 1.2.2.7 | Safely transfer patient and equipment onto and off transport stretcher and between transport platforms. | SEP<br>ST | DOTS<br>MA<br>CBD<br>MSF<br>Ex(W)<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.2.2.8 | Secure airway, venous access and other invasive devices for transport. | SEP<br>ST | DOTS<br>MA<br>CBD<br>TSR<br>Ex(W)<br>OSPE |
| 1.2.2.9 | Splint injuries to reduce pain and movement complications. | SEP<br>ST | MA<br>DOPS<br>CBD<br>Ex(W)<br>OSPE |

### *1.2.3 Clinical Management of the Trapped Patient*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.3.1 | Injury patterns and pathophysiology associated with entrapment and associated clinical management strategies, including:<br>a. crush injury<br>b. impalement<br>c. hypothermia<br>d. prolonged entrapment<br>e. severe limb entrapment<br>f. airway compromise<br>g. suspension syndrome | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.3.2 | Appropriate patient monitoring during entrapment and extrication. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.3.3 | Risks of extrication to the patient. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.3.4 | Pain management strategies for the trapped patient. | SEP<br>ST | Ex(W)<br>OSPE |
| 1.2.3.5 | Impact of entrapment, environment and poor access to the patient on clinical decision making. | SEP<br>ST | Ex(W)<br>OSPE |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.3.6 | Effectively manage the trapped patient. | SEP<br>ST | MA<br>CBD<br>TSR<br>Ex(W)<br>OSPE |
| 1.2.3.7 | Demonstrate the appropriate level of clinical monitoring during complex extrications. | SEP<br>ST | CBD<br>Ex(W)<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.2.3.8 | Make a rapid assessment of the clinical needs of the trapped patient. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| 1.2.3.9 | Show awareness of patient, self and team safety during prolonged extrication. | SEP<br>ST | MA<br>MSF<br>OSPE |
| 1.2.3.10 | Show awareness of how medical interventions can impact on extrication timeframes. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |
| 1.2.3.11 | Demonstrate CRM in extrication and communicate clinical decisions and urgency to members of other emergency services. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |
| 1.2.3.12 | Demonstrate use of psychological, physical and pharmacological techniques to provide anxiolysis and analgesia in the trapped patient. | SEP<br>ST | MA<br>OSPE |

## *1.2.4 Management of Emergencies During Retrieval*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.4.1 | Pre-arrival and pre-transport strategies to minimise risks to patients during transfer. | SEP<br>ST | Ex(W) |
| 1.2.4.2 | Principles of management of common patient deteriorations during the retrieval. | SEP<br>ST | Ex(W) |
| 1.2.4.3 | Processes for notification of the tasking and coordination agency in the event of patient deterioration. | SEP<br>ST | Ex(W) |
| 1.2.4.4 | Procedures for escalation in the event of an emergency involving the crew or transport platform. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.4.5 | Demonstrate effective CRM in the event of patient deterioration. | SEP<br>ST | TSR<br>Ex(W)<br>OSPE |
| 1.2.4.6 | Demonstrate communication with the tasking agency in the event of patient deterioration. | SEP<br>ST | MA<br>TSR<br>Ex(W)<br>OSPE |
| ***Independently, be able to*** | | | |
| 1.2.4.7 | Anticipate, plan and manage patient deteriorations requiring emergent action during transport, including but not limited to:<br>a. cardiac arrest<br>b. airway compromise<br>c. accidental extubation<br>d. failure to ventilate<br>e. hypoxia<br>f. tension pneumothorax<br>g. hypotension<br>h. loss of vascular access<br>i. oxygen supply failure<br>j. dysrhythmia<br>k. emesis<br>l. obstetric patient delivery<br>m. acute agitation<br>n. increase in pain severity | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |

## *1.2.5 Pre-hospital and Retrieval Anaethesia and Sedation*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.5.1 | Principles of emergency anaesthesia in the PHRM environment, including indications, standardisation of airway assessment, difficult airway planning, use of checklist, pre-intubation optimisation, positioning, pre-oxygenation, use of airway equipment, induction paralysis, confirmatory testing, post-intubation management, failed airway drills. | SEP<br>ST | DOPS<br>Ex(W) |
| 1.2.5.2 | Impacts of the PHRM environment on decision making in airway management. | SEP<br>ST | Ex(W) |
| 1.2.5.3 | Essential elements of emergency anaesthesia for infants and children, bariatric patients, obstetric patients and older patients in the PHRM environment. | SEP<br>ST | DOPS<br>Ex(W) |
| 1.2.5.4 | Principles of analgesia and sedation in the PHRM environment, including risks and benefits. | SEP<br>ST | DOPS<br>Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.5.5 | Manage the environmental and geographical considerations related to a PHRM intubation, including ambient light and temperature, weather and positioning. | SEP<br>ST | MA<br>Ex(W)<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.2.5.6 | Demonstrate appropriate patient selection for intubation and ventilation in the PHRM setting. | SEP<br>ST | DOPS<br>Ex(W)<br>OSPE |
| 1.2.5.7 | Demonstrate appropriate pre-intubation optimisation in the PHRM setting. | SEP<br>ST | DOPS<br>MA<br>Ex(W)<br>OSPE |
| 1.2.5.8 | Provide emergency anaesthesia to all PHRM patients, including infants and children, bariatric patients, obstetric patients and older patients. | SEP<br>ST | DOPS<br>Ex(W)<br>OSPE |
| 1.2.5.9 | Demonstrate safe and appropriate clinical management of the post-intubation patient across all clinical scenarios in the PHRM environment. | SEP<br>ST | DOPS<br>Ex(W)<br>OSPE |
| 1.2.5.10 | Demonstrate the appropriate procedural sedation techniques in the PRHM setting. | SEP<br>ST | DOPS<br>Ex(W)<br>OSPE |

## *1.2.6 Invasive Life, Limb and Sight Saving Procedures*

| Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | |
| 1.2.6.1 Critical decision-making related to life, limb and sight saving procedures. | SEP<br>ST | Ex(W) |
| 1.2.6.2 Frameworks that apply to life, limb and sight saving procedures detailed below, including:<br>a. Clinical Indications<br>b. Contraindications (absolute and relative)<br>c. Equipment required (and how this differs from in hospital)<br>d. Controlling your environment to maximise the chance of success<br>e. Teamwork and CRM considerations<br>f. Roles and skill mix requirements<br>g. Performance of the procedure<br>h. Potential complications and mitigation of risk of these<br>i. Risk mitigation to patient and staff | SEP<br>ST | DOPS<br>Ex(W)<br>OSPE |
| 1.2.6.3 Principles of life, limb and sight saving procedures. | SEP<br>ST | DOPS<br>Ex(W) |
| ***Independently, be able to:*** | | |
| 1.2.6.4 Perform the following procedures in the PHRM environment:<br>a. Front of neck access<br>b. Thoracic decompression<br>c. Tube thoracostomy<br>d. Resuscitative thoracotomy<br>e. Resuscitative hysterotomy<br>f. Escharotomy<br>g. Emergency amputation<br>h. Lateral canthotomy/cantholysis<br>i. Maxillo-facial haemorrhage control<br>j. Application of arterial tourniquets<br>k. Insertion and management of Sengstaken-Blakemore tubes<br>l. Insertion and management of Bakri balloons<br>m. Transcutaneous and transvenous pacing<br>n. Haemostatic agents<br>o. Methods of junctional haemorrhage control<br>p. Suturing techniques for haemorrhage control | SEP<br>ST | DOPS<br>TSR<br>Ex(W)<br>OSPE |

## 1.2.7 Mechanical Ventilation and Respiratory Support

| | Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.7.1 | Principles, definitions, indications related to high-flow oxygen delivery systems. | SEP<br>ST | Ex(W) |
| 1.2.7.2 | Principles, definitions, indications related to non-invasive ventilation as it pertains to the PHRM environment. | SEP<br>ST | Ex(W) |
| 1.2.7.3 | Principles, definitions, indications related to mechanical ventilation as it pertains to the PHRM environment. | SEP<br>ST | Ex(W) |
| 1.2.7.4 | Calculation of oxygen consumption for high-flow oxygen delivery, non-invasive and invasive ventilation and predict and manage oxygen supply in the PHRM environment. | SEP<br>ST | Ex(W) |
| 1.2.7.5 | Principles of management of a difficult to oxygenate and difficult to ventilate patient, including recruitment strategies, positioning, maintenance of PEEP during transport, and considerations for escalation of care (e.g., ECMO). | SEP<br>ST | Ex(W) |
| 1.2.7.6 | Capabilities and limitations of transport ventilators. | SEP<br>ST | Ex(W) |
| 1.2.7.7 | Principles of management of ventilator alarms and troubleshooting. | SEP<br>ST | Ex(W) |
| 1.2.7.8 | Role of capnography in PHRM, with specific reference to:<br>a. Waveform interpretation<br>b. Prognostic value<br>c. Causes of high, low and inaccurate readings<br>d. Assessing adequacy of ventilation<br>e. Identifying airways resistance and gas flow issues | SEP<br>ST | Ex(W |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.7.9 | Deliver safe and effective care to patients receiving ventilator and/or oxygenation support during transport. | SEP<br>ST | DOTS<br>CBD<br>MSF<br>TSR<br>Ex(W)<br>OSPE |
| 1.2.7.10 | Initiate and trouble-shoot non-invasive ventilation using an industry relevant transport ventilator. | SEP<br>ST | DOTS<br>Ex(W)<br>OSPE |
| 1.2.7.11 | Choose appropriate modes and associated settings of mechanical ventilation, adapting them to the clinical context of the patient within the retrieval setting, with specific reference to patients with:<br>a. increased airway resistance<br>b. decreased lung compliance<br>c. chest trauma<br>d. haemodynamic compromise<br>e. intracranial pathology<br>f. VQ mismatch<br>g. Severe ARDS | SEP<br>ST | DOTS<br>CBD<br>Ex(W)<br>OSPE |
| 1.2.7.12 | Manage the complications of mechanical ventilation during transport including but not limited to:<br>a. unplanned extubation<br>b. circuit disconnection and ventilator failure<br>c. gas trapping<br>d. tension pneumothorax<br>e. failure of gas supply | SEP<br>ST | DOTS<br>CBD<br>Ex(W)<br>OSPE |
| 1.2.7.13 | Manage patient with tracheostomy, including paediatric and adult patients. | SEP<br>ST | DOTS<br>CBD<br>TSR<br>Ex(W)<br>OSPE |

## 1.2.8 PHRM Management of the Critically Injured Patient

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.8.1 | Common mechanisms of injury and expected patterns of injury. | SEP<br>ST | Ex(W) |
| 1.2.8.2 | Principles of trauma management in the PHRM setting, including:<br>a. The multiply-injured patient<br>b. Maxillo-facial and ocular trauma<br>c. Airway trauma, including airway burns<br>d. Neurological trauma<br>e. Spinal injury<br>f. Injury to the axial skeleton<br>g. Abdomino-thoracic trauma<br>h. Pelvic trauma<br>i. Limb trauma<br>j. Penetrating trauma due to guns, knives and explosive devices<br>k. Major burns<br>l. Blast injuries<br>m. Inhalational injury<br>n. Decompression injury | SEP<br>ST | DOPS<br>Ex(W) |
| 1.2.8.3 | Role of point-of-care ultrasound in the assessment and management of the trauma patient in the PHRM environment. | SEP<br>ST | Ex(W) |
| 1.2.8.4 | Trauma Bypass Systems and the integration of systems' principles of practice in the PHRM context. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.8.5 | Effectively manage patients with major trauma in the PHRM environment. | SEP<br>ST | MA<br>DOTS<br>DOPS<br>CBD<br>TSR<br>Ex(W)<br>OSPE |
| 1.2.8.6 | Expedite and facilitate the transfer of time-critical trauma patients to the appropriate level of care. | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |
| 1.2.8.7 | Effectively manage patients with traumatic cardiac arrest. | SEP<br>ST | MA<br>CBD<br>TSR<br>Ex(W)<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.2.8.8 | Anticipate the clinical trajectory of the PHRM trauma patients and activate the appropriate clinical pathways. | SEP<br>ST | CBD<br>MSF<br>TSR<br>Ex(W)<br>OSPE |
| 1.2.8.9 | Ensure injured patients receive timely and appropriate analgesia and sedation. | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |
| 1.2.8.10 | Perform clinical point-of-care ultrasound examination, including identification of:<br>a. pneumo- and/or haemothorax<br>b. free fluid in the abdomen<br>c. pericardial effusion and tamponade | SEP<br>ST | DOTS<br>MA<br>DOPS<br>CBD<br>Ex(W)<br>OSPE |
| 1.2.8.11 | Diagnose and manage severe haemorrhage in the pre-hospital context. | SEP<br>ST | MA<br>DOPS<br>CBD<br>Ex(W)<br>OSPE |

## *1.2.9 PHRM Management of the Critically Ill Patient*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.9.1 | Role of PHRM teams in diagnosis, resuscitation management and transport of the patient with critical illness, including but not limited to:<br>a. CNS illness (e.g., acute SAH, acute stroke, status epilepticus, acute CNS infection).<br>b. cardiac illness (e.g., acute MI and decompensated heart failure, decompensated dysrhythmias, aortic dissection).<br>c. respiratory illness (e.g. respiratory infection, ARDS, severe COPD, pulmonary embolism, pulmonary haemorrhage, pneumothorax).<br>d. circulatory failure (e.g. septic shock, cardiogenic shock, massive and sub-massive pulmonary embolism, pericardial tamponade).<br>e. severe abdominal emergencies, including leaking AAA, upper GI bleed and bowel obstruction.<br>f. hepatic failure, renal failure, severe electrolyte disturbance, DIC, common life-threatening overdoses, and metabolic syndromes. | SEP<br>ST | Ex(W) |
| 1.2.9.2 | PHRM team provision of definitive care for some clinical conditions prior to transport. | SEP<br>ST | Ex(W) |
| 1.2.9.3 | Requirement for case-by-case assessment of the degree of resuscitation and stabilisation that is appropriate prior to transport. | SEP<br>ST | Ex(W) |
| 1.2.9.4 | Appropriate levels of patient monitoring during transfer as guided by patient condition and relevant standards. | SEP<br>ST | Ex(W) |
| 1.2.9.5 | Use of mechanical circulatory support tools, including balloon pump, ECMO, mechanical CPR devices, external and internal pacing, by PHRM teams in the PHRM environment. | SEP<br>ST | Ex(W) |
| 1.2.9.6 | Role of POCUS use by PHRM teams in critical illness to help differentiate causes of the shocked state, respiratory failure and ultrasound guidance of procedures. | SEP<br>ST | Ex(W) |
| 1.2.9.7 | Indications for central access, IO access and arterial BP monitoring for critically ill patients in the PHRM environment. | SEP<br>ST | DOPS<br>Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.9.8 | Effectively manage patients with medical cardiac arrest in PHRM environment. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |
| 1.2.9.9 | Diagnose, resuscitate and manage the patient with critical illness in the PHRM environment. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |
| 1.2.9.10 | Appropriately package and secure the critically ill patient and their ancillary devices and lines, including being able to rationalise intensive care therapies for transport. | SEP<br>ST | DOTS<br>MA<br>DOPS<br>CBD<br>TSR<br>OSPE |
| 1.2.9.11 | Safely load and unload patients on mechanical circulatory support devices on road and air transport frames. | SEP<br>ST | DOTS<br>MA<br>CBD<br>MSF<br>OSPE |

| | | | |
|---|---|---|---|
| ***Independently, be able to:*** | | | |
| **1.2.9.12** | Develop and implement management strategies for the post-surgical patient in the PHRM environment, with specific regard to complications, haemorrhage, infection, pain, temperature regulation, dressing and drain management and aeromedical and road transport considerations. | SEP<br>ST | MA<br>DOPS<br>CBD<br>TSR<br>OSPE |
| **1.2.9.13** | Appropriately perform relevant vascular access for critically ill patients in the PHRM environment. | SEP<br>ST | MA<br>DOPS<br>CBD<br>TSR<br>OSPE |
| **1.2.9.14** | Perform clinical Point-of-Care Ultrasound (POCUS) examination, with specific regard to:<br>a. Focused Echo for Life Support<br>b. Thoracic Ultrasound | SEP<br>ST | DOTS<br>MA<br>DOPS<br>CBD<br>TSR<br>OSPE |
| **1.2.9.15** | Troubleshoot mechanical circulatory support device alarms and failure in the transport environment. | SEP<br>ST | DOTS<br>CBD<br>OSPE |
| **1.2.9.16** | Implement, troubleshoot and optimise temporary cardiac pacing devices for transport with regards to capture, rate, sensitivity and output. | SEP<br>ST | DOPS<br>CBD<br>TSR<br>OSPE |
| **1.2.9.17** | Safely transport a patient with ICP monitoring and/or ventricular drain in-situ. | SEP<br>ST | DOTS<br>MA<br>DOPS<br>CBD<br>TSR<br>OSPE |
| **1.2.9.18** | Give a concise and accurate handover of the critically ill patient. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |
| **1.2.9.19** | Anticipate and communicate patient requirements to receiving facility. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |

## *1.2.10 PHRM Management of Obstetric Emergencies*

| Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | |
| **1.2.10.1** Physiological changes during pregnancy, and implications for patient management during transport. | SEP<br>ST | Ex(W) |
| **1.2.10.2** Obstetric patient presentations and contextual circumstances that commonly require retrieval, including but not limited to, antepartum haemorrhage, premature rupture of membranes, preterm labour, postpartum haemorrhage, obstructed labour, pre-eclampsia & eclampsia, death in utero, VTE, cardiac dysfunction/heart failure, cardiac arrest/maternal collapse. | SEP<br>ST | Ex(W) |
| **1.2.10.3** Obstetric care capabilities in regional and rural centres, and role and availability of specialist perinatal advice/services. | SEP<br>ST | Ex(W) |
| **1.2.10.4** Role of PHRM transport with regard to the obstetric patient and appropriate preparation for retrieval and the implications on the timing and mode of transport. | SEP<br>ST | Ex(W) |
| **1.2.10.5** Clinical management of preterm labour in the PHRM environment. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | |
| **1.2.10.6** Perform cardiopulmonary resuscitation of obstetric and postpartum woman. | SEP<br>ST | DOTS<br>MA<br>OSPE |
| ***Independently, be able to:*** | | |
| **1.2.10.7** Provide pain and anti-emesis management to the obstetric patient requiring retrieval. | SEP<br>ST | MA<br>CBD<br>OSPE |
| **1.2.10.8** Manage maternal and fetal emergencies and complications, including:<br>a. precipitous delivery<br>b. premature rupture of membranes<br>c. pre-eclampsia and eclampsia<br>d. obstructed labour<br>e. shoulder dystocia<br>f. fetal compromise<br>g. breech delivery<br>h. cardiac arrest/maternal collapse<br>i. intrapartum sepsis<br>j. death in utero. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| **1.2.10.9** Manage obstetric haemorrhage, with specific regard to haemorrhage control measures, management during transport, and blood product administration. | SEP<br>ST | MA<br>DOPS<br>CBD<br>TSR<br>OSPE |
| **1.2.10.10** Manage preterm labour retrieval, with specific regard to pharmacology, blood pressure, complications, nausea and vomiting, integrating transferring hospital protocols, and potential complications. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| **1.2.10.11** Manage medical, surgical and traumatic emergencies that may present in obstetric patients in the PHRM environment | SEP<br>ST | MA<br>DOPS<br>CBD<br>MSF<br>TSR<br>OSPE |
| **1.2.10.12** Consider the psycho-social needs of obstetric patients and their families during perinatal transfer. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |

## *1.2.11 PHRM Management of Acute Behavioural Disturbance*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.11.1 | Range of disorders that can present as acute behavioural disturbance in PHRM, including psychiatric illness, medical pathology, brain syndromes, and toxicology. | SEP<br>ST | Ex(W) |
| 1.2.11.2 | Risks of transporting a behaviourally disturbed patient and strategies to mitigate these, including choice of best transport option. | SEP<br>ST | Ex(W) |
| 1.2.11.3 | Relevant mental health legislation and the jurisdictional differences in laws, with particular regard for:<br>a. scheduling and physical and chemical restraint of a behaviourally disturbed patient<br>b. transporting behaviourally disturbed patients without consent | SEP<br>ST | Ex(W) |
| 1.2.11.4 | Organic brain syndromes, acute psychiatric illness and their influence on communication with the receiving hospital. | SEP<br>ST | Ex(W) |
| 1.2.11.5 | Options for chemical restraint and ongoing sedation of the behaviourally disturbed patient requiring retrieval. | SEP<br>ST | Ex(W) |
| 1.2.11.6 | Special populations and concomitant requirements, including Indigenous patients, children and adolescents, forensic (prisoners). | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.11.7 | Physically and chemically restrain patients humanely and within the boundaries of acceptable medical and legal practice. | SEP<br>ST | MA<br>CBD<br>OSPE |
| 1.2.11.8 | Appropriately package the behaviourally disturbed patient. | SEP<br>ST | MA<br>CBD<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.2.11.9 | Undertake a pre-hospital mental state examination and risk assessment for self-harm, suicide, violence and risk of in-transport decompensation. | SEP<br>ST | MA<br>TSR<br>OSPE |
| 1.2.11.10 | Communicate the findings of the risk assessment to the team, including aircrew. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| 1.2.11.11 | Assess patient capacity with regard to treatment and transport decisions. | SEP<br>ST | MA<br>CBD<br>OSPE |
| 1.2.11.12 | Correctly apply the relevant mental health legislation, as appropriate. | SEP<br>ST | MA<br>CBD<br>Ex(W)<br>OSPE |
| 1.2.11.13 | Utilise appropriate monitoring during sedation of behaviourally disturbed patients. | SEP<br>ST | DOTS<br>MA<br>CBD<br>OSPE |

## *1.2.12 PHRM Management of Critically Ill or Injured Paediatric Patients*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.12.1 | Differences in paediatric and adult anatomy and physiology, and implications for advanced PHRM care, with specific regard to neurological, respiratory, cardiovascular, musculo-skeletal systems and pain management. | SEP<br>ST | Ex(W) |
| 1.2.12.2 | Common mechanisms and patterns of injury specific to paediatric trauma and integrate these with the systematic assessment of the patient. | SEP<br>ST | Ex(W) |
| 1.2.12.3 | Principles of management of the paediatric trauma patient, with specific regard to:<br>a. Traumatic brain injury<br>b. Chest and abdominal injury<br>c. Pelvic and long bone fracture | SEP<br>ST | Ex(W) |
| 1.2.12.4 | Principles of management of the paediatric critical care patient, with specific regard to:<br>a. Neurological illness<br>b. Respiratory illness<br>c. Surgical conditions<br>d. Infectious illness | SEP<br>ST | Ex(W) |
| 1.2.12.5 | The role and impact of parents/care givers within paediatric retrieval. | SEP<br>ST | Ex(W) |
| 1.2.12.6 | Signs of physical abuse suggestive of non-accidental injury and the implications for PHRM teams, including mandatory reporting of injuries. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.12.7 | Utilise parents/guardians when managing psychological barriers to treatment and/or transport. | SEP<br>ST | CBD<br>MSF<br>OSPE |
| 1.2.12.8 | Manage a child and/or parent/guardian refusing treatment for a possible life-threatening injury. | SEP<br>ST | CBD<br>MSF<br>OSPE |
| 1.2.12.9 | Recognise the emotional needs of the parents and family. | SEP<br>ST | CBD<br>MSF<br>OSPE |

### *1.2.13 PHRM Management of Neonatal Patients by non-Neonatal Retrieval Services*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.13.1 | Neonatal anatomy and physiology and implications for advanced PHRM care, with specific regard to respiratory, cardiovascular and musculo-skeletal systems. | SEP<br>ST | Ex(W) |
| 1.2.13.2 | Physiological changes of birth and the newborn period. | SEP<br>ST | Ex(W) |
| 1.2.13.3 | Physiological effects of retrieval on the neonate. | SEP<br>ST | Ex(W) |
| 1.2.13.4 | Clinical assessment of neonatal patients. | SEP<br>ST | Ex(W) |
| 1.2.13.5 | Initial care of the neonate, with specific reference to conditions of the newborn commonly encountered in the PHRM context. | SEP<br>ST | Ex(W) |
| 1.2.13.6 | Principles of dedicated neonatal retrieval services. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.13.7 | Demonstrate principles of resuscitation of the newborn. | SEP<br>ST | DOPS<br>CBD<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.2.13.8 | Demonstrate competent use of equipment for the resuscitation of a newborn. | SEP<br>ST | DOTS<br>DOPS<br>OSPE |
| 1.2.13.9 | Provide initial assessment and care of the neonate, with specific regard to neonatal problems commonly encountered in the PHRM context, including sepsis, respiratory distress and hypoglycaemia. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |
| 1.2.13.10 | Appropriately communicate with parents of neonatal patients and recognise the importance of their involvement in the retrieval process. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |

### *1.2.14 PHRM Management of the Bariatric Patient*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.14.1 | Clinical and physiological implications of the bariatric condition and the implications of these on safe patient retrieval. | SEP<br>ST | Ex(W) |
| 1.2.14.2 | Alteration in diagnostic accuracy of modalities commonly used in PHRM decision making. | SEP<br>ST | Ex(W) |
| 1.2.14.3 | Manual handling risks in the bariatric patient. | SEP<br>ST | Ex(W) |
| 1.2.14.4 | Manual handling resources and tools available to assist in the retrieval of the bariatric patient, including lifting devices. | SEP<br>ST | Ex(W) |
| 1.2.14.5 | Implications of girth versus weight in transport considerations. | SEP<br>ST | Ex(W) |
| 1.2.14.6 | Transport platform limitations and implications for the safe retrieval of the bariatric patient. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.14.7 | Safely load and unload the bariatric patient in the full range of transport modalities. | SEP<br>ST | MA<br>CBD<br>MSF<br>OSPE |
| 1.2.14.8 | Demonstrate safe manual handling technique in the bariatric patient in the PHRM environment. | SEP<br>ST | MA<br>MSF<br>OSPE |

## *1.2.15 PHRM Management of Older Patients*

| Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | |
| **1.2.15.1** Confounding factors in PHRM management of the critically ill or injured older patient, including but not limited to:<br>a. effect of polypharmacy in the older patient<br>b. effects of co-morbidities on the presenting complaint, such as cognitive impairment, sensory deficit, general frailty | SEP<br>ST | Ex(W) |
| **1.2.15.2** Factors impacting retrieval decisions about the older patient, including:<br>a. psychosocial issues; language, isolation, support<br>b. family and cultural issues<br>c. advance care planning<br>d. prognosis vs intervention<br>e. limits of care | SEP<br>ST | Ex(W) |
| **1.2.15.3** Rational assessment and management of the older patient, taking into consideration predicted clinical course and prognosis. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | |
| **1.2.15.4** Manage agitation and cognitive impairment in an older patient in the PHRM setting. | SEP<br>ST | MA<br>MSF<br>TSR<br>OSPE |
| **1.2.15.5** Institute measures to prevent pressure area breakdown during transport. | SEP<br>ST | MA<br>OSPE |
| ***Independently, be able to:*** | | |
| **1.2.15.6** Discuss the appropriate levels of intervention with the patient, family and health care team. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| **1.2.15.7** Identify older patients for whom transport is not in the best interests of them or their family. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |
| **1.2.15.8** Alter standard clinical approach relevant to polypharmacy or reduced physiological reserve. | SEP<br>ST | MA<br>CBD<br>OSPE |
| **1.2.15.9** Predict the impact of co-morbidities on the clinical course and management. | SEP<br>ST | MA<br>CBD<br>OSPE |
| **1.2.15.10** Facilitate social continuity; escorts, arranging family liaison. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |

## *1.2.16 PHRM Management of Infectious Diseases*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.16.1 | Options for transport of the patient with a infectious disease. | SEP<br>ST | Ex(W) |
| 1.2.16.2 | PPE requirements for PHRM teams transporting a patient with an infectious disease, including Level A-D PPE and individual patient isolation and transport systems, and implications for the team and transport platform. | SEP<br>ST | Ex(W) |
| 1.2.16.3 | Procedures for cleaning and disposing of equipment used to transport the patient with an infectious disease. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.16.4 | Effectively risk assess at the scene the patient with an infectious disease, the decision and mode of transport and appropriate PPE. | SEP<br>ST | MA<br>CBD<br>OSPE |
| 1.2.16.5 | Effectively package patients with infectious diseases/potential infectious diseases. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |
| ***Independently, be able to:*** | | | |
| 1.2.16.6 | Discuss with the crew risk mitigation strategies with respect to the patient with an infectious disease. | SEP<br>ST | MA<br>CBD<br>MSF<br>OSPE |
| 1.2.16.7 | Effectively utilise PPE for infectious disease in the PHRM environment. | SEP<br>ST | MA<br>CBD<br>MSF<br>OSPE |

## *1.2.17 PHRM Management of Environmental Emergencies*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| **1.2.17.1** | The clinical conditions that can occur in divers resulting in PHRM involvement. | SEP<br>ST | Ex(W) |
| **1.2.17.2** | The physiological changes of decompression illness and its relevance to PHRM management. | SEP<br>ST | Ex(W) |
| **1.2.17.3** | Transport considerations for patients with a diviing-related emergency. | SEP<br>ST | Ex(W) |
| **1.2.17.4** | Support resources available for managing diving-related illness. | SEP<br>ST | Ex(W) |
| **1.2.17.5** | Aviation, transport and retrieval considerations, including likely complications, diagnostic investigation and specific medical management for the patient with a toxicological emergency, including psychostimulant, depressant, prescription and OTC medication emergencies. | SEP<br>ST | Ex(W) |
| **1.2.17.6** | Medico-legal considerations relevant to the retrieval of the patient with a drug overdose, including:<br>a. Use of restraints, physical and chemical<br>b. Transport of the patient under a section or treatment order, including suicidal patients<br>c. Paediatric patients<br>d. Management of patient escorts | SEP<br>ST | Ex(W) |
| **1.2.17.7** | Pathophysiology, clinical indicators, projected clinical course, likely complications, diagnostic investigation and specific medical management of venomous or poisonous animal, fungi and plant bites, stings and ingestions requiring transport. | SEP<br>ST | Ex(W) |
| **1.2.17.8** | Transport considerations for patients with a toxinological emergency:<br>a. Identification of the appropriate antidote or antivenom<br>b. Access to and administration of antivenom and/or antidotes<br>c. Supportive care considerations | SEP<br>ST | Ex(W)<br>OSPE |
| **1.2.17.9** | Pathophysiology, clinical indicators, likely complications and specific PHRM management of exposure syndromes of chemical, biological and radiological (CBR) agents, with specific regard to:<br>a. dose-response relationships and factors affecting toxicity<br>b. latency | SEP<br>ST | Ex(W)<br>OSPE |
| **1.2.17.10** | Sources of toxin and CBR agent advice. | SEP<br>ST | Ex(W) |
| **1.2.17.11** | Safe initial approach to a suspected CBR incident. | SEP<br>ST | Ex(W) |
| **1.2.17.12** | The roles and responsibilities of all responding agencies involved in CBR incidents. | SEP<br>ST | Ex(W) |
| **1.2.17.13** | Principles of detection and identification of CBR agents, including pre-hospital capabilities. | SEP<br>ST | Ex(W) |
| **1.2.17.14** | Levels of PPE used for patients and responders involved in CBR incidents. | SEP<br>ST | Ex(W) |
| **1.2.17.15** | Awareness of pre-hospital triage processes and disposition for patients involved in CBR incidents. | SEP<br>ST | Ex(W) |
| **1.2.17.16** | Principles of decontamination of victims and emergency personnel in PHRM setting. | SEP<br>ST | Ex(W) |
| **1.2.17.17** | Forensic considerations of a CBR incident and the role of the PHRM team. | SEP<br>ST | Ex(W) |

## 1.2.17 PHRM Management of Environmental Emergencies (continued)

| | | | |
|---|---|---|---|
| ***As part of the PHRM team, be able to:*** | | | |
| **1.2.17.18** | Plan and prepare for the retrieval of a patient with a diving, toxicological or toxinological emergency, including the expected clinical course, resources required and potential complications. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>Ex(W)<br>OSPE |
| ***Independently, be able to:*** | | | |
| **1.2.17.19** | Manage the clinical complications of diving-related illness and trauma. | SEP<br>ST | MA<br>CBD<br>OSPE |
| **1.2.17.20** | Conduct a safe and accurate clinical and physical risk assessment of the patient with a toxicological or toxinological presentation and convey this to the transport crew. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| **1.2.17.21** | Demonstrate a safe approach to a suspected toxic or CBR agent incident, including a thorough risk assessment. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| **1.2.17.22** | Interpret diagnostic results, communicate their significance and implement management strategies to optimise patient care accordingly for the PHRM patient with a toxicological presentation. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |

## *1.2.18 PHRM Management of the Dying Patient*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.2.18.1 | Concept of medical futility. | SEP<br>ST | Ex(W) |
| 1.2.18.2 | Regulatory frameworks for patient consent and advanced care directives. | SEP<br>ST | Ex(W) |
| 1.2.18.3 | Basic principles of management of a pre-hospital death involving an infant, child, adult or multiple casualties. | SEP<br>ST | Ex(W) |
| 1.2.18.4 | Variations in approach to death among different cultural and religious groups. | SEP<br>ST | Ex(W) |
| 1.2.18.5 | Manage end-of-life decisions in the PHRM environment. | SEP<br>ST | Ex(W) |
| 1.2.18.6 | Medical management of the patient being retrieved for potential organ donation. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.2.18.7 | Identify patients for whom transport is not in the best interests of them or their family. | SEP<br>ST | CBD<br>TSR<br>OSPE |
| 1.2.18.8 | Recognise appropriate goals of therapy for patients nearing the end of life. | SEP<br>ST | CBD<br>TSR<br>OSPE |
| 1.2.18.9 | Demonstrate the ability to communicate effectively with patients, relatives and referring staff with regards to establishing appropriate goals of therapy. | SEP<br>ST | CBD<br>MSF<br>TSR<br>OSPE |
| 1.2.18.10 | Appropriately prescribe or outline appropriate palliative and symptom control therapy. | SEP<br>ST | CBD<br>TSR<br>OSPE |
| 1.2.18.11 | Display a professional and sensitive approach to relatives and colleagues following a death or decision to palliate in the PHRM context. | SEP<br>ST | CBD<br>MSF<br>TSR<br>OSPE |

## 1.3 Multi-casualty and Major Incident Management

### *1.3.1 Principles of Emergency Preparedness, Response and Recovery*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.3.1.1 | Classes of major incidents and their definitions. | SEP ST | Ex(W) |
| 1.3.1.2 | Similarities and differences between a multi-casualty scenario and a major incident. | SEP ST | Ex(W) |
| 1.3.1.3 | Types of responses for major incidents, including AusMAT, NZMAT, USAR, SAR. | SEP ST | Ex(W) |
| 1.3.1.4 | Roles, responsibilities and capabilities of PHRM teams involved in emergency preparedness, response and recovery in a major incident or natural disaster. | SEP ST | Ex(W) |
| 1.3.1.5 | Range of emergency services and support agencies involved in emergency preparedness, response and recovery in a major incident or natural disaster. | SEP ST | Ex(W) |
| 1.3.1.6 | Roles of operational and tactical personnel in a major incident. | SEP ST | Ex(W) |
| 1.3.1.7 | Roles and capabilities of medically configured transport platforms in a major incident. | SEP ST | Ex(W) |
| 1.3.1.8 | Principles of major incident triage and commonly used triage tools. | SEP ST | Ex(W) |
| 1.3.1.9 | Ethical issues surrounding decision-making during a major incident. | SEP ST | Ex(W) |

## *1.3.2 Operational and Tactical Response to Multi-Casualty and Major Incidents*

| | Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 1.3.2.1 | Principles of mass casualty and major incident triage and its application to treatment, transport, disposition, further investigations and access to definitive care | SEP<br>ST | Ex(W) |
| 1.3.2.2 | Strategies for the management of the following in relation to major incidents:<br>a. A multi-sector incident<br>b. A casualty clearing station<br>c. A survivor reception centre<br>d. The deceased<br>e. Communication<br>f. Participation in Multi-disciplinary briefings<br>g. sustainability | SEP<br>ST | Ex(W) |
| 1.3.2.3 | The potential need for displaced medical teams and deployments for several days away from home. | SEP<br>ST | Ex(W) |
| 1.3.2.4 | The role and the management of the media at major incidents. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 1.3.2.5 | Effectively integrate into multi-disciplinary major incident teams. | SEP<br>ST | MSF<br>TSR<br>OSPE |
| 1.3.2.6 | Apply appropriate focused initial medical aid at the site of a major incident, allowing for dynamic timelines, logistics and scenarios. | SEP<br>ST | OSPE |
| 1.3.2.7 | Appropriately use triage tools. | SEP<br>ST | OSPE |
| 1.3.2.8 | Maintain a comprehensive decision log. | SEP<br>ST | OSPE |
| 1.3.2.9 | Competently and confidently perform the roles of an operational and tactical level medical commander. | SEP<br>ST | TSR<br>OSPE |
| 1.3.2.10 | Participate in incident debriefing. | SEP<br>ST | MSF<br>TSR<br>OSPE |
| 1.3.2.11 | Competently and confidently manage the following in relation to major incidents:<br>a. a multi-sector incident<br>b. a casualty clearing station<br>c. a survivor reception centre<br>d. the deceased<br>e. communication<br>f. multi-disciplinary briefings<br>g. sustainability | SEP<br>ST | TSR<br>OSPE |
| 1.3.2.12 | Perform key roles in major incident response, including Medical Commander, Casualty Clearing Station Officer, Treatment and Transport Teams. | SEP<br>ST | TSR<br>OSPE |

# Domain 2 Prioritisation and Decision Making

## 2.1 Cognition and Decision Making

### *2.1.1 Critical Thinking and Clinical Decision Making*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 2.1.1.1 | Importance of critical thinking in clinical decision making in the PHRM environment, with emphasis on information-poor situations. | SEP<br>ST | Ex(W) |
| 2.1.1.2 | Cognitive strategies to develop and apply critical thinking principles in the PHRM context. | SEP<br>ST | Ex(W) |
| 2.1.1.3 | Team-based decision making in PHRM and the shared mental model. | SEP<br>ST | Ex(W) |
| 2.1.1.4 | Common pitfalls in critical thinking. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 2.1.1.5 | Use the 'collective team wisdom' to assist in complex problem solving. | SEP<br>ST | MA<br>MSF<br>OSPE |
| 2.1.1.6 | Apply critical thinking strategies to decisions regarding patient care and transport in the PHRM environment. | SEP<br>ST | MA<br>OSPE |
| 2.1.1.7 | Justify clinical decisions in light of patient context, time critical issues, definitive care availability, scene, logistics and resource limitations. | SEP<br>ST | MA<br>OSPE |
| 2.1.1.8 | Demonstrate comprehensive information gathering strategies to improve the validity of available data that can be applied in a variety of operational and clinical PHRM circumstances and environments. | SEP<br>ST | MA<br>MSF<br>OSPE |
| 2.1.1.9 | Stratify available information according to relevance, importance and validity for operational, cultural and clinical decision making. | SEP<br>ST | MA<br>OSPE |
| ***Independently, be able to:*** | | | |
| 2.1.1.10 | Demonstrate awareness of the factors influencing critical decision making during a mission. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| 2.1.1.11 | Demonstrate strategic, process-driven problem-solving skills in the clinical and operational PHRM environment. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| 2.1.1.12 | Differentiate between strategic and clinical/ethical decision-making and integrate these concepts into the operational PHRM environment. | SEP<br>ST | MA<br>CBD<br>TSR<br>OSPE |

## 2.1.2 Principles of Mindful and Reflective Practice

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 2.1.2.1 | Principles of self-awareness and critical reflection in the PHRM environment. | SEP<br>ST | Ex(W) |
| 2.1.2.2 | Key elements of mindfulness and their impact on cognition in PHRM. | SEP<br>ST | Ex(W) |
| 2.1.2.3 | Relationship between mindfulness and clinical decision making in PHRM. | SEP<br>ST | Ex(W) |
| 2.1.2.4 | Relationship between mindfulness, reflective practice and error. | SEP<br>ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 2.1.2.5 | Recognise limitations of self and team and/or barriers to effective practice within the operational environment and construct strategies for managing them. | SEP<br>ST | MSF<br>TSR |
| 2.1.2.6 | Apply the principles of self-awareness and critical reflection to own practice. | SEP<br>ST | MSF<br>TSR |

### *2.1.3 Strategies for Mitigation of Cognitive Bias*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 2.1.3.1 | Types of cognitive bias prevalent in clinical PHRM practice and factors influencing them. | SEP<br>ST | Ex(W) |
| 2.1.3.2 | Strategies and cognitive aids for mitigation of cognitive bias in PHRM practice. | SEP<br>ST | Ex(W) |
| 2.1.3.3 | Metacognitive tools to be aware of cognitive biases that may apply to the situation. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 2.1.3.4 | Use cognitive aids effectively as a team to mitigate cognitive bias. | SEP<br>ST | MSF<br>TSR |
| 2.1.3.5 | Communicate effectively within the team to acknowledge factors that may contribute to cognitive bias and mitigate these. | SEP<br>ST | MSF<br>TSR |
| ***Independently, be able to:*** | | | |
| 2.1.3.6 | Be aware of the effect of fatigue on cognitive bias and institute appropriate checks and balances. | SEP<br>ST | MSF<br>TSR |
| 2.1.3.7 | Correctly use cognitive aids to mitigate cognitive bias. | SEP<br>ST | MSF<br>TSR |

# Domain 3 Communication

## 3.1 Communication in the PHRM Context

### *3.1.1 Principles of Successful Communication in PHRM*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 3.1.1.1 | Role of the PHRM system in relation to the referring and receiving health care facilities/hospitals. | SEP<br>ST | Ex(W) |
| 3.1.1.2 | Communication pathways required in the PHRM environment for safe and efficacious patient management and transport. | SEP<br>ST | Ex(W) |
| 3.1.1.3 | Responsibilities of the Retrieval Physician with regard to communication with:<br>a. Referring hospital staff<br>b. Receiving hospital staff<br>c. Paramedics / other support crew<br>d. Pilots<br>e. Coordinator<br>f. Patient<br>g. Family/whānau | SEP<br>ST | Ex(W) |
| 3.1.1.4 | Strategies to optimise communication with an unfamiliar team in a high cognitive load environment, including but not limited to:<br>a. The shared mental model<br>b. Clarity and cohesion of communication<br>c. Closing the loop<br>d. Summaries and updates<br>e. Conflict resolution<br>f. Graded assertiveness<br>g. Handover | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 3.1.1.5 | Brief and plan as a team. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| 3.1.1.6 | Communicate effectively using both verbal and non-verbal techniques with all members of the retrieval team. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| 3.1.1.7 | Communicate effectively with personnel outside of the PHRM medical team involved in patient care. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |

*continued*

## *3.1.1 Principles of Successful Communication in PHRM (continued)*

***Independently, be able to:***

| | | | |
|---|---|---|---|
| **3.1.1.8** | Facilitate appropriate transfer of information between referring and receiving hospitals. | SEP<br>ST | MA<br>DOPS<br>CBD<br>MSF<br>TSR<br>OSPE |
| **3.1.1.9** | Demonstrate effective conflict resolution and graded assertiveness in the PHRM context. | SEP<br>ST | MA<br>TSR<br>OSPE |
| **3.1.1.10** | Communicate and escalate appropriately when the case is more complex than the original tasking. | SEP<br>ST | MA<br>CBD<br>MSF<br>TSR<br>OSPE |
| **3.1.1.11** | Communicate effectively in a teaching and learning environment. | SEP<br>ST | MSF<br>TSR<br>OSPE |

### 3.1.2 Communication Processes

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 3.1.2.1 | Principles of safe transfer of care at referring and receiving hospitals. | SEP<br>ST | Ex(W) |
| 3.1.2.2 | Structured communication tools that facilitate communication in the PHRM environment. | SEP<br>ST | Ex(W) |
| 3.1.2.3 | Communication with patients and family/whānau of a non-English or English as a second language background. | SEP<br>ST | Ex(W) |
| 3.1.2.4 | Use of daily brief, tasking brief, situation reports, and post-mission debrief in PHRM. | SEP<br>ST | Ex(W) |
| 3.1.2.5 | Role and importance of clinical handover. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 3.1.2.6 | Facilitate and document post-mission debriefing. | SEP<br>ST | CBD<br>MSF<br>TSR |
| 3.1.2.7 | Take part in a daily brief. | SEP<br>ST | CBD<br>MSF<br>TSR |
| 3.1.2.8 | Gather sufficient clinical information to support decision making and provision of treatment in the PHRM setting. | SEP<br>ST | CBD<br>MSF<br>TSR |
| ***Independently, be able to:*** | | | |
| 3.1.2.9 | Obtain and give a structured clinical handover, including the use of handover tools. | SEP<br>ST | CBD<br>MSF<br>TSR |
| 3.1.2.10 | Build in cognitive strategies such as check points into a complex mission to ensure mission safety. | SEP<br>ST | MSF<br>TSR |

### 3.1.3 Communication Devices and Procedures

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 3.1.3.1 | Infrastructure for telecommunications in the PHRM system. | SEP<br>ST | Ex(W) |
| 3.1.3.2 | Communication systems and devices used in the PHRM environment, e.g.:<br>a. Radios<br>• HF/VHF/UHF<br>• 'Down the wire' radio communications<br>• Concept of zones/channels<br>• Incident channels<br>b. Satellite phones<br>c. Mobile phones<br>d. Hand signals<br>e. Telehealth | SEP<br>ST | Ex(W) |
| 3.1.3.3 | Phonetic alphabet. | SEP<br>ST | Ex(W) |
| 3.1.3.4 | Technological aids that facilitate communication in the PHRM environment. | SEP<br>ST | Ex(W) |
| 3.1.3.5 | Benefits and challenges of the use of formal voice procedure within effective telecommunications. | SEP<br>ST | Ex(W) |
| 3.1.3.6 | Communication cascades and duress alarms as safety mechanisms in the PHRM environment. | SEP<br>ST | Ex(W) |
| 3.1.3.7 | Principles of telehealth in urban, rural and remote healthcare. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 3.1.3.8 | Communicate using radio with correct voice procedures. | SEP<br>ST | DOTS<br>MSF |
| 3.1.3.9 | Use common standard telecommunication equipment and procedures within the PHRM setting, including mobile and satellite phones, recording of calls, use of related computer networks and software applications. | SEP<br>ST | DOTS<br>MSF |
| 3.1.3.10 | Communicate complex messages in a clear and efficient manner using common standard telecommunication equipment. | SEP<br>ST | DOTS<br>MSF |

# Domain 4 Teamwork and Collaboration

## 4.1 Teamwork

### *4.1.1 Principles of Teamwork and CRM in the PHRM Environment*

| | Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 4.1.1.1 | Origins and impetus for the development of CRM/TRM. | SEP<br>ST | Ex(W) |
| 4.1.1.2 | Types of teams in PHRM e.g. Ad-hoc vs regular, explicit vs implicit, large vs small. | SEP<br>ST | Ex(W) |
| 4.1.1.3 | Principles of effective teamwork & features of a high performing team. | SEP<br>ST | Ex(W) |
| 4.1.1.4 | Challenges to teamwork in the PHRM context. | SEP<br>ST | Ex(W) |
| 4.1.1.5 | Barriers to success in high performance medical teams, including human and system factors, stress, fatigue, and group stress behaviours. | SEP<br>ST | Ex(W) |
| 4.1.1.6 | Strategies that maximise the efficiency and delivery of care in pre-hospital and inter-hospital transfer, with specific regard to handover, staff interaction and delegation, structuring of retrieval preparation, effective use of other resources and communication. | SEP<br>ST | Ex(W) |
| 4.1.1.7 | Key behaviours that promote effective communication and teamwork in the PHRM environment, e.g.:<br>a. effective leadership and followership<br>b. situational awareness<br>c. shared mental models<br>d. closed-loop communication<br>e. graded assertiveness<br>f. conflict resolution<br>g. briefing, pre-briefing and debriefing | SEP<br>ST | Ex(W) |
| 4.1.1.8 | Implications of working independently in the PHRM context. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 4.1.1.9 | Effectively manage conflict in the PHRM environment. | SEP<br>ST | MSF<br>TSR |
| 4.1.1.10 | Participate in interdisciplinary training. | SEP<br>ST | MSF<br>TSR |

## *4.1.1 Principles of Teamwork and CRM in the PHRM Environment (continued)*

***Independently, be able to:***

| | | | |
|---|---|---|---|
| **4.1.1.11** | Maintain situational awareness in complex pre-hospital scenes and inter-facility transfers. | SEP<br>ST | MA<br>MSF<br>TSF |
| **4.1.1.12** | Recognise and utilise non-technical team tools and communication strategies to respond to causes of communication and teamwork breakdown. | SEP<br>ST | MSF<br>TSR |
| **4.1.1.13** | Utilise strategies to effectively work independently through the application of identifiable strategic and process driven mechanisms. | SEP<br>ST | MSF<br>TSR |
| **4.1.1.14** | Work effectively in multiple roles within fluid multi-disciplinary and unfamiliar PHRM teams. | SEP<br>ST | MSF<br>TSR |
| **4.1.1.15** | Manage and delegate team resources to maximise empowerment of team members. | SEP<br>ST | MSF<br>TSR |
| **4.1.1.16** | Adapt leadership style to the needs of the clinical situation as it arises. | SEP<br>ST | MSF<br>TSR |

### 4.1.2 *Critical Incident Debrief*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 4.1.2.1 | Definitions of a critical incident. | SEP<br>ST | Ex(W) |
| 4.1.2.2 | Stressors inherent in the PHRM context. | SEP<br>ST | Ex(W) |
| 4.1.2.3 | Acute, persistent and cumulative stress responses. | SEP<br>ST | Ex(W) |
| 4.1.2.4 | Benefits and potential risks of debrief, including effects on self and team. | SEP<br>ST | Ex(W) |
| 4.1.2.5 | Personal psychosocial coping strategies and needs. | SEP<br>ST | Ex(W) |
| 4.1.2.6 | Post-traumatic stress disorder and burnout in PHRM personnel. | SEP<br>ST | Ex(W) |
| 4.1.2.7 | Post-traumatic stress disorder in PHRM patients and bystanders. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 4.1.2.8 | Actively participate in critical incident debrief. | SEP<br>ST | MSF<br>TSR |
| ***Independently, be able to:*** | | | |
| 4.1.2.9 | Provide informal emotional and psychological support to colleagues. | SEP<br>ST | MSF<br>TSR |
| 4.1.2.10 | Know how to access support for yourself and/or colleagues. | SEP<br>ST | MSF<br>TSR |
| 4.1.2.11 | Report and escalate critical incidents through organisational processes. | SEP<br>ST | MSF<br>TSR |

# Domain 5 Management and Leadership

## 5.1 Management

### *5.1.1 Development and Maintenance of a Safety Culture in PHRM*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 5.1.1.1 | Importance of a safety culture in PHRM. | SEP ST | Ex(W) |
| 5.1.1.2 | Characteristics of safe workplace cultures. | SEP ST | Ex(W) |
| 5.1.1.3 | Self-awareness, personal responsibility and accountability for a safety culture. | SEP ST | Ex(W) |
| 5.1.1.4 | Characteristics of high-reliability organisations. | SEP ST | Ex(W) |
| 5.1.1.5 | Principles of threat and error management in PHRM. | SEP ST | Ex(W) |
| 5.1.1.6 | Individual responses and responsibilities in building and maintaining a safety culture, including post-mission team debrief, daily briefs, sentinel event reporting, competency checklists, and currency requirements. | SEP ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 5.1.1.7 | Openly discuss and learn from near misses or errors. | SEP ST | MSF |
| 5.1.1.8 | Engage in teams-focused activities that build a safety culture. | SEP ST | MSF |
| 5.1.1.9 | Demonstrate team responsibility in speaking up about any potential issues or threats during a mission. | SEP ST | MSF |
| ***Independently, be able to*** | | | |
| 5.1.1.10 | Report safety concerns or adverse events contemporaneously. | SEP ST | MSF |
| 5.1.1.11 | Uphold the individual requirements and commitment to building and maintaining a safety culture. | SEP ST | MSF |
| 5.1.1.12 | Manage risk and undertake risk mitigation strategies in clinical PHRM. | SEP ST | MSF |
| 5.1.1.13 | Demonstrate the principles of threat and error management in identifying and correcting latent threats in the PHRM environment. | SEP ST | MSF |

## 5.1.2 Safety Systems in PHRM

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 5.1.2.1 | Principles of legislative requirements relating to:<br>a. alcohol and other drugs<br>b. fatigue management<br>c. dangerous goods<br>d. pilot and crew fitness-to-fly | SEP<br>ST | Ex(W) |
| 5.1.2.2 | The contribution of technical, human, team and organisation factors to the development and maintenance of a safety culture. | SEP<br>ST | Ex(W) |
| 5.1.2.3 | Hazard identification and reporting systems. | SEP<br>ST | Ex(W) |
| 5.1.2.4 | Fatigue risk management tools. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 5.1.2.5 | Demonstrate medical crew role in hazard identification and reporting. | SEP<br>ST | MSF<br>TSR |
| ***Independently, be able to:*** | | | |
| 5.1.2.6 | Identify and report potential hazards. | SEP<br>ST | MSF<br>TSR |
| 5.1.2.7 | Recognise when they and others are not fit to fly. | SEP<br>ST | MSF<br>TSR |

### *5.1.3 Adverse Events Investigation and Management*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 5.1.3.1 | Principle of clinical governance in the PHRM setting, including the elements of quality assurance prescribed within national health care standards. | SEP<br>ST | Ex(W) |
| 5.1.3.2 | Existence of and how to access policies and procedures for adverse events investigation and management within the PHRM setting. | SEP<br>ST | Ex(W) |
| 5.1.3.3 | Concepts of 'just culture' and 'reporting culture' within the context of adverse event investigation. | SEP<br>ST | Ex(W) |
| 5.1.3.4 | Adverse events reporting and investigation. | SEP<br>ST | Ex(W) |

## 5.2 Leadership

### *5.2.1 Retrieval Coordination Processes*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 5.2.1.1 | Essential structure and function of the tasking agency. | SEP<br>ST | Ex(W) |
| 5.2.1.2 | Principles of clinical coordination, including call receipt, advice provision, decision to retrieve, skill level to retrieve, transport platform, destination. | SEP<br>ST | Ex(W) |
| 5.2.1.3 | General layout of a 'Coordination Room' and identify the potential roles of relevant personnel. | SEP<br>ST | Ex(W) |
| 5.2.1.4 | Principles of coordination and how they relate to clinical PHRM, including:<br>a. resourcing<br>b. skill sets and crew mix<br>c. transport platform choice<br>d. on-road versus aeromedical skill sets<br>e. patient complexity<br>f. workload fatigue conflicts<br>g. risk awareness<br>h. mission prioritization<br>i. weather and environmental impacts | SEP<br>ST | Ex(W) |

## 5.3 Governance

### *5.3.1 Audit and Quality Assurance*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 5.3.1.1 | Principles of quality assurance and continuing quality improvement within a PHRM organisation. | SEP ST | Ex(W) |
| 5.3.1.2 | Importance of PHRM data collection. | SEP ST | Ex(W) |
| 5.3.1.3 | Case review, debriefing and feedback in the PHRM environment. | SEP ST | Ex(W) |
| 5.3.1.4 | Appropriate methods for presenting PHRM case debrief, critique and feedback in the operational context. | SEP ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 5.3.1.5 | Participate actively in case review sessions. | SEP ST | TSR |

# Domain 6 Health Advocacy

## 6.1 Support and Access

### *6.1.1 Regional and Remote Health Support*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 6.1.1.1 | Principles of equity in healthcare and its relationship to PHRM. | SEP<br>ST | Ex(W) |
| 6.1.1.2 | Causes of reduced equity, including geographical remoteness, health literacy and cultural consideration. | SEP<br>ST | Ex(W) |
| 6.1.1.3 | PHRM role in meeting the challenges inherent in regional and remote health services. | SEP<br>ST | Ex(W) |

### 6.1.2 Cultural Competence

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 6.1.2.1 | Principles of intercultural communication, cultural awareness, sensitivity and safety as it pertains to PHRM. | SEP<br>ST | Ex(W) |
| 6.1.2.2 | Indigenous health issues in PHRM settings. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 6.1.2.3 | Care for patient of any cultural background without prejudice, assumptions or judgement of cultural differences and with respect to culturally-mediated priorities and choices. | SEP<br>ST | MSF<br>TSR |
| ***Independently, be able to:*** | | | |
| 6.1.2.4 | Collaborate with Indigenous health care workers and other cultural support staff to optimise patient and staff outcomes. | SEP<br>ST | MSF<br>TSR |
| 6.1.2.5 | Demonstrate proficiency in intercultural communication within the PHRM context. | SEP<br>ST | MSF<br>TSR |

### 6.1.3 Recognition and Management of Psychological Risk in PHRM

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 6.1.3.1 | Risk factors for psychological harm in PHRM practitioners. | SEP ST | Ex(W) |
| 6.1.3.2 | Symptoms and signs of compassion fatigue, burnout and PTSD. | SEP ST | Ex(W) |
| 6.1.3.3 | Individual strategies for minimising psychological harm in PHRM. | SEP ST | Ex(W) |
| 6.1.3.4 | Identification and initial management of the PHRM clinician affected by PTSD. | SEP ST | Ex(W) |
| 6.1.3.5 | Risk mitigation for PTSD in patients. | SEP ST | Ex(W) |
| 6.1.3.6 | The role of parents and caregivers in the management of psychological factors in paediatric patients. | SEP ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 6.1.3.7 | Recognise the symptoms of stress, compassion fatigue and burnout in yourself and colleagues. | SEP ST | TSR |
| 6.1.3.8 | Utilise individual tools and strategies for identifying, minimising and dealing with psychological harm in PHRM practitioners. | SEP ST | TSR |
| 6.1.3.9 | Manage patients with psychological barriers to aeromedical or road transport. | SEP ST | TSR |
| 6.1.3.10 | Undertake a self-assessment for compassion fatigue and burnout. | SEP ST | TSR |
| 6.1.3.11 | Participate in debrief of highly emotive and psychologically confronting cases. | SEP ST | TSR |

# Domain 7 Scholarship and Teaching

## 7.1 Scholarship

### *7.1.1 Research in the PHRM Context*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 7.1.1.1 | Commonly used research terms and their use in PHRM-specific research. | SEP<br>ST | Ex(W) |
| 7.1.1.2 | Challenges and limitations of conducting research in the PHRM environment. | SEP<br>ST | Ex(W) |
| 7.1.1.3 | Challenges in developing PHRM clinical practice guidelines where the evidence is limited. | SEP<br>ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 7.1.1.4 | Formulate a PHRM research question. | SEP<br>ST | TSR |

## *7.1.2 Evidence-based Medicine in the PHRM Environment*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 7.1.2.1 | Types of trials and their applicability to PHRM research questions. | SEP<br>ST | Ex(W) |
| 7.1.2.2 | Principles of critical appraisal of published PHRM literature. | SEP<br>ST | Ex(W) |
| 7.1.2.3 | Concept of knowledge translation and change management in PHRM organisations. | SEP<br>ST | Ex(W) |
| 7.1.2.4 | Applicability of hospital-based research to the PHRM environment. | SEP<br>ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 7.1.2.5 | Integrate contemporary research into clinical and operational practice. | SEP<br>ST | MSF<br>TSR |
| 7.1.2.6 | Take part in research development and/or execution within a PHRM system. | SEP<br>ST | MSF<br>TSR |
| 7.1.2.7 | Critically appraise a PHRM research article. | SEP<br>ST | CBD<br>TSR |
| 7.1.2.8 | Discuss the integration of contemporary research into clinical and operational practice. | SEP<br>ST | MSF<br>TSR |

## 7.2 Teaching

### *7.2.1 Teaching in the PHRM Context*

| | Learning Objective | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 7.2.1.1 | The concept of mental rehearsal for high acuity, high consequence, low occurrence situations. | SEP<br>ST | Ex(W) |
| 7.2.1.2 | The limited bedside teaching opportunities in the PHRM environment and the alternative teaching opportunities available. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 7.2.1.3 | Take an active and engaged part in simulation-based training. | SEP<br>ST | TSR |
| 7.2.1.4 | Lead a PHRM case-based discussion and follow-up discussion with colleagues. | SEP<br>ST | TSR<br>CBD |
| ***Independently, be able to:*** | | | |
| 7.2.1.5 | Facilitate the learning of health care colleagues to enhance their autonomy and decision making, including using vocabulary that encourages their learning and acknowledges their understanding. | SEP<br>ST | MSF<br>TSR |
| 7.2.1.6 | Provide guidance and advice to students and fellow health professionals in a considerate and consultative manner. | SEP<br>ST | MSF<br>TSR |
| 7.2.1.7 | Identify and use suitable PHRM cases as teaching and learning opportunities. | SEP<br>ST | MSF<br>TSR |
| 7.2.1.8 | Deliver sessions teaching procedural skills and use of equipment. | SEP<br>ST | MSF<br>TSR |
| 7.2.1.9 | Deliver timely constructive feedback to colleagues. | SEP<br>ST | MSF<br>TSR |

# Domain 8 Professionalism

## 8.1 Personal Responsibility

### *8.1.1 Fitness to Practice*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 8.1.1.1 | Importance of work-life balance, fatigue management, nutrition and hydration and the impact these have on individual work performance. | SEP<br>ST | Ex(W) |
| 8.1.1.2 | Regulatory body guidelines on the use of alcohol and drugs, illicit and prescribed, including DAMP testing. | SEP<br>ST | Ex(W) |
| 8.1.1.3 | Interaction between physical, mental and emotional wellbeing, and the need for matching of job requirements to a clinician's physical ability to perform the role. | SEP<br>ST | Ex(W) |
| 8.1.1.4 | Role of colleague support. | SEP<br>ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 8.1.1.5 | Demonstrate appropriate preparation for the role and daily work pattern in terms of work-life balance, personal fatigue management, nutrition and hydration. | SEP<br>ST | MSF<br>TSR |
| 8.1.1.6 | Perform self-assessment with regards to mental and emotional wellbeing. | SEP<br>ST | MSF<br>TSR |

## *8.1.2 Commitement to Ongoing Learning*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 8.1.2.1 | Importance of ongoing learning and education in maintaining up-to-date personal clinical practice. | SEP<br>ST | Ex(W) |
| 8.1.2.2 | Methods by which clinicians can access PHRM-specific learning opportunities. | SEP<br>ST | Ex(W) |
| 8.1.2.3 | Commitment to excellence and progressing the service. | SEP<br>ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 8.1.2.4 | Participate in service education programs. | SEP<br>ST | MSF<br>TSR |
| 8.1.2.5 | Utilise FOAMed, social media platforms, networking sites and smartphone applications as pertains to PHRM. | SEP<br>ST | MSF<br>TSR |
| 8.1.2.6 | Openly discuss learning points from cases. | SEP<br>ST | MSF<br>TSR |
| 8.1.2.7 | Participate in service development clinical projects. | SEP<br>ST | MSF<br>TSR |
| 8.1.2.8 | Identify areas of need for ongoing learning and the ability and self-efficacy to address those needs. | SEP<br>ST | MSF<br>TSR |
| 8.1.2.9 | Demonstrate progression in career, access educational opportunities and completion of workplace-based assessments and/or continuing professional development requirements, as appropriate. | SEP<br>ST | MSF<br>TSR |
| 8.1.2.10 | Maintain clinical competence by adequate case exposure and ongoing learning. | SEP<br>ST | MSF<br>TSR |

## 8.2 Legalities and Ethics

### *8.2.1 Medico-legal Frameworks Impacting on PHRM Practice*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 8.2.1.1 | Role of informed consent and implied consent within the context of PHRM. | SEP<br>ST | Ex(W) |
| 8.2.1.2 | Coroners regulations regarding death in flight. | SEP<br>ST | Ex(W) |
| 8.2.1.3 | Advanced care directives, seven step pathways, resuscitation limitation and do-not-resuscitate orders. | SEP<br>ST | Ex(W) |
| ***Independently, be able to:*** | | | |
| 8.2.1.4 | Adequately fulfil the clinical and documentation requirements to “pronounce life extinct”. | SEP<br>ST | TSR |
| 8.2.1.5 | Recognise and employ strategies for safe use of social media, understanding the greater likelihood for patient identification. | SEP<br>ST | TSR |
| 8.2.1.6 | Recognise inappropriate use of social media. | SEP<br>ST | TSR |

## 8.3 Media Management

### *8.3.1 Media Management*

| Learning Objective | | Teaching and Learning Strategies | Assessment Methods |
|---|---|---|---|
| ***Demonstrate knowledge and understanding of:*** | | | |
| 8.3.1.1 | Principles of media management at accident and incident scenes. | SEP<br>ST | Ex(W) |
| 8.3.1.2 | Patient confidentiality and privacy considerations in PHRM responses to accident and incident scenes. | SEP<br>ST | Ex(W) |
| 8.3.1.3 | Organisational policies on communication with media. | SEP<br>ST | Ex(W) |
| ***As part of the PHRM team, be able to:*** | | | |
| 8.3.1.4 | Preserve patient and provider confidentiality at accident scenes. | SEP<br>ST | MSF<br>TSR |
| 8.3.1.5 | Deflect or defer media requests for information or comment to appropriate spokespeople. | SEP<br>ST | TSR |
| ***Independently, be able to:*** | | | |
| 8.3.1.6 | Manage media at accidents or major incident in accordance with organisational policy. | SEP<br>ST | TSR |

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