Entrustable Professional Activities for Adult Critical Care Medicine

2024
VERSION 2.0

This document applies to residents who have not yet entered the stage containing revised EPAs.

Critical Care Medicine: Transition to Discipline EPA #1

Assessing and providing initial management for new patients admitted to the ICU or seen in consultation

Key Features:

- This EPA focuses on the initial medical care of patients who are critically ill, including assessment, initial diagnosis, preliminary management, including management of clinical deterioration.
- An important feature of this EPA is the timely and appropriate recognition of the need for additional assistance.
- This EPA may be observed in a variety of clinical settings, including the intensive care unit, emergency room, and on the wards.
- This EPA does not include resuscitation (TTD2), nor developing a fully matured differential diagnosis for complex presentations, or a complete management plan (F1).

Assessment plan:

Direct observation and/or case review by attending physician or senior trainee

Use Form 1. Form collects information on:

- Observation: direct; indirect

Collect 2 observations of achievement

- At least 1 direct observation
- At least 2 different observers

CanMEDS Milestones:

1 **ME 1.4 Perform focused clinical assessments that address all relevant issues**

2 **ME 2.1 Prioritize issues to address in the patient's assessment and management**

3 **ME 1.4 Recognize urgent problems and one's own limitations, and seek assistance as needed**

4 **ME 1.6** Identify clinical situations in which complexity, uncertainty, and ambiguity may play a role in decision-making

5 **ME 2.3** Ascertain the patient's goals of care and ensure care is aligned with those goals, as the patient's situation evolves

6 **ME 2.2** Develop an initial diagnosis relevant to the patient's presentation

7 **COM 4.1 Communicate in a manner that is respectful, non-judgmental, and culturally aware**

8 **COM 5.1 Document relevant information**

9 **COL 1.2 Seek and respond to input from other health care professionals**

10 **COL 1.3** Communicate clearly and directly to promote understanding in the health care team

11 **L 2.1** Consider health care resources and costs when determining the investigation and management plan

12 **HA 1.1** Facilitate timely access to limited health care resources

Critical Care Medicine: Transition to Discipline EPA #2

Initiating and leading resuscitation for hemodynamically unstable patients

Key Features:

- This EPA focuses on initiating and leading resuscitation for critically ill patients, following the principles of crisis resource management.

Assessment plan:

Direct observation by attending physician or senior trainee

Use Form 1. Form collects information on:

- Condition: cardiac arrest; respiratory failure; sepsis; shock; other *(write in)*
- Context: clinical; simulation

Collect 2 observations of achievement

- At least 1 clinical encounter
- At least 2 different observers

CanMEDS Milestones:

1 ME 2.2 Provide assessment and initial stabilization of ABCs (Airway, Breathing, and Circulation)

2 ME 1.4 Recognize urgent problems and one's own limitations and seek assistance as needed

~~3~~ L 4.2 Lead the resuscitation team effectively, ensuring clear roles and responsibilities for team members, setting priorities, providing constructive intervention when required, and re-evaluating patient and situation frequently

4 COL 1.3 Communicate with the health care team using clear language, knowledge sharing and summarizing clinical evolution

5 COL 2.2 Communicate orders clearly citing names (or other identification) and using closed loop communication

Critical Care Medicine: Transition to Discipline EPA #3

Coordinating patient care and delegating tasks in the ICU setting

Key Features:

- This EPA focuses on organizational skills and role modeling.
- It includes coordinating patient care, demonstrating leadership, and supporting junior learners.
- This EPA is not based on the resident leading the entire team through rounds or managing all patients.

Assessment plan:

Direct observation by supervisor. Each observation should include multiple days of service.

Use Form 1.

Collect 2 observations of achievement

- At least 2 different observers

CanMEDS Milestones:

1 **S 2.3 Assign and prioritize tasks for junior residents**

2 **S 2.3** Supervise learners to ensure they work within their limitations, ensuring patient safety

3 **COL 1.2 Identify the roles and scopes of practice of health care providers related to Critical Care Medicine and utilize their expertise appropriately**

4 **COL 2.1** Actively listen to and engage in interactions with collaborators

5 **HA 1.1 Facilitate equitable access to needed services and resources for patients and families**

6 **P 2.1 Role-model behaviours that demonstrate accountability to patients, society and the profession**

7 **P 1.1 Complete assigned responsibilities, including following up with junior residents on tasks that they were assigned**

Critical Care Medicine: Transition to Discipline EPA #4

Transferring clinical information between health care providers at handover

Key Features:

- This EPA focuses on the communication required for safe handover within the critical care patient team or as the patient leaves the unit to another health care setting.
- It includes the timely written documentation of the events while in the ICU (including appropriate record-keeping, daily events), as well as verbal handover when going off duty and at the end of call shifts.

Assessment plan:

Direct observation and/or review of documentation (chart, handover paperwork, transfer/discharge note) by supervisor and/or physician receiving handover

Use Form 1. Form collects information on:

- Observation *(select all that apply)*: single patient handover; entire unit handover

Collect 3 observations of achievement

- At least 2 entire unit handovers
- At least 3 different observers

CanMEDS Milestones:

1 **ME 4.1 Establish plans for ongoing care, including follow-up on investigations and response to treatment**

2 **COL 3.2** Describe specific information required for safe and effective handover during transitions in care

3 **COM 5.1** Organize information systematically within an electronic or written medical record

4 **COM 5.1** Maintain accurate and up-to-date problem lists

5 **COM 5.1** Document information about patients and their medical conditions in a manner that enhances intra- and interprofessional care

6 **COL 3.2 Summarize patient issues, including plans to deal with ongoing concerns**

7 **COL 3.2 Provide anticipatory guidance for issues that are likely to arise**

8 **COL 1.3** Communicate clearly and directly to promote understanding in the health care team

Critical Care Medicine: Transition to Discipline EPA #5

Providing routine updates to patients or families

Key Features:

- This EPA focuses on the application of medical expertise and communication skills to summarize medical conditions and plans for the day to patients and families in the ICU setting.
- It includes communicating in a respectful and culturally aware manner, and respecting diversity and difference, including but not limited to the impact of socio-economic background, gender, religion, and cultural beliefs on decision making.
- It does not include managing challenging conversations, such as end-of-life discussion or disclosure of adverse events.

Assessment plan:

Direct observation by supervisor

Use Form 1. Form collects information on:

- Condition *(write in)*:

Collect 2 observations of achievement

- At least 2 observers

CanMEDS Milestones:

1 **P 1.2** Ensure that the patient and family are informed about the diagnosis and plan of care

2 **COM 1.1 Introduce oneself and explain one's role in the interprofessional team**

3 **COM 1.1 Communicate using a patient-centered approach that facilitates patient trust and autonomy and that is characterized by empathy, respect, and compassion**

4 **COM 4.1 Communicate in a manner that is respectful, non-judgmental, and culturally aware**

5 **COM 3.1 Convey information about medical course and management plan clearly and accurately**

6 **COM 3.1 Use language tailored to the health literacy level of patients and families**

7 **COM 1.4** Identify, verify and validate non-verbal cues on the part of the patient and/or family

8 **COM 3.1 Use strategies to verify and validate the understanding of the patient and family.**

9 **COM 5.1** Document the clinical encounter to accurately reflect the discussion and decisions

10 **P 1.1 Respect diversity and difference, including but not limited to the impact of socio-economic background, gender, religion and cultural beliefs on decision making**

Critical Care Medicine: Foundations EPA #1

Evaluating, stabilizing, and managing patients presenting with common ICU conditions

Key Features:

- This EPA focuses on routine ICU care, including evaluating, stabilizing, admitting, and providing day-to-day management for patients with uncomplicated critical illness.
- This includes: diagnosis and management of the presenting problem, management of any underlying conditions, prevention and management of common ICU complications, and attention to and management of nutrition, sedation, and analgesia.
- This EPA does not include patients with complex, poorly differentiated or multi-type shock/organ dysfunction, polypharmacy overdose, multi-system or multicomorbid illness, multi-system trauma, and transplant, nor the critically ill obstetrical patient.

Assessment Plan:

Direct observation and/or review of admission/case discussion by attending physician or senior resident

Use Form 1. Form collects information on:

- Setting: initial assessment; daily care
- Presentation: surgical; medical
- Primary diagnosis (*write in*):

Collect 6 observations of achievement

- At least 3 initial assessment
- At least 3 daily care
- Variety of medical and surgical presentations
- At least 3 different observers

CanMEDS Milestones:

1 **ME 1.3** Apply knowledge of basic physiology to the management of common ICU conditions

2 **ME 1.4 Perform focused clinical assessments that address all relevant issues**

3 **ME 1.6** Develop a plan that considers the current complexity, uncertainty and ambiguity in a clinical situation

4 **ME 2.2 Select and interpret the results of investigations and imaging**

5 **ME 2.3** Work with the patient and family to establish goals of care

6 **ME 2.4 Develop and implement initial and/or ongoing management plans for patients with common ICU conditions**

7 **ME 2.4** Develop plans to monitor the evolution of the clinical course and/or the patient's response to treatment

8 **ME 3.1** Integrate planned procedures or therapies into the overall plan of care

9 **ME 4.1 Determine the need and timing of consultation with other specialists**

10 **ME 5.2** Organize safe intrahospital transport of patient to and from ICU, using all necessary human and equipment resources, recognizing when it may be inappropriate to transport patient

11 **COL 1.2** Implement a multidisciplinary approach to the care of ICU patients

12 **COL 1.3 Engage in respectful shared decision-making with physicians and colleagues in other health care professions**

13 **P 2.2** Demonstrate a commitment to patient safety and quality improvement through adherence to institutional policies and procedures

Critical Care Medicine: Foundations EPA #2

Evaluating and managing uncomplicated and/or routine patients requiring mechanical ventilation

Key Features:

- This EPA focuses on applying knowledge of invasive and non-invasive (NIV) mechanical ventilation, its indications, and complications.
- It includes the initiation, maintenance, weaning, and discontinuation of mechanical ventilation in the context of common clinical scenarios with respiratory failure due to pulmonary and non-pulmonary reasons.
- This EPA may be observed during clinical assessment, patient rounds, or while teaching other trainees.
- This EPA does not include patients with complicated, severe, refractory disease (e.g., severe hypoxic or hypercapnic respiratory failure, severe airway obstruction, patient/ventilator asynchrony, complicated waveform analysis, etc.).

Assessment Plan:

Direct and indirect observation by attending physician

Use Form 1. Form collects information on:

- Ventilation technique: invasive; non-invasive
- Reason for resp support: pulmonary; non-pulmonary

Collect 9 observations of achievement

- At least 3 non-invasive ventilations
- At least 4 different observers

CanMEDS Milestones:

1 **ME 1.3 Apply knowledge of respiratory physiology and cardiopulmonary interactions**

2 **ME 1.6** Develop a plan that considers the current complexity, uncertainty, and ambiguity in a clinical situation

3 **ME 2.2 Interpret diagnostic imaging of the respiratory system**

4 **ME 2.4 Develop and implement an initial management plan for uncomplicated patients requiring non-invasive or invasive ventilation**

5 **ME 3.2** Ensure that the patient and family are informed about the risks and benefits of each treatment options in the context of best evidence and guidelines

6 **ME 5.2** Use cognitive aids such as clinical care paths to enhance patient safety

7 **COM 3.1** Use strategies to verify and validate the understanding of the patient and family

8 **COM 4.3** Answer questions from the patient and family about next steps

9 **COL 1.2 Seek and respond to input from other health care professionals**

Critical Care Medicine: Foundations EPA #3

Teaching, supervising, and leading junior physicians and other health care professionals

Key Features:

- This EPA focuses on informal/bedside teaching (i.e., teaching a procedure, reviewing a case), role modelling, and helping junior learners identify their own gaps in knowledge and skill, and to develop a plan for their acquisition.

Assessment Plan:

Direct observation by attending physician, senior resident in Critical Care Medicine, or other faculty/consultants with input from junior trainees and/or other health care professionals

Use Form 1.

Collect 3 observations of achievement

CanMEDS Milestones:

1 **S 2.1 Use strategies for deliberate, positive role-modelling**

2 **S 2.2 Create a positive learning environment**

3 **S 2.4** Identify the learning needs and desired learning outcomes of others

4 **COL 1.2 Assign tasks and responsibilities to other team members, commensurate with their skills and patient complexity**

5 **COL 2.1** Delegate tasks and responsibilities in a respectful manner

6 **S 2.3 Provide learners with opportunities for appropriate clinical responsibility**

7 **S 2.3 Supervise learners to ensure they work within their limitations, ensuring patient safety**

8 **S 2.5 Provide feedback to enhance learning and performance**

9 **P 1.1** Intervene when behaviours toward colleagues and/or learners undermine a respectful environment

10 **S 2.3 Identify unsafe clinical situations involving learners and manage them appropriately**

Critical Care Medicine: Foundations EPA #4

Identifying and providing care for patients' and their family's needs around the end-of-life

Key Features:

- This EPA focuses on the application of communication skills to support patients and families. At this stage, it is limited to clinical interactions that are not characterized by conflict.
- This includes breaking bad news and leading goals of care discussions and building consensus around end-of-life decision making such as withdrawal of life sustaining therapies and potential organ and tissue donation.
- It also includes integrating rituals and end-of-life practices in keeping with the patient's and family's cultural, spiritual and religious beliefs.
- This EPA may be observed in the ICU, in the ER, on the inpatient ward or in a simulated setting.

Assessment Plan:

Direct observation by attending physician with input from TTP level trainee, bedside RN, social worker, family and/or other members of the care team

Use form 1. Form collects information on:

- Activity observed: family discussion/meeting; note written after meeting; simulated activity; other (write in)

Collect 5 observations of achievement

- At least 1 family meeting/discussion
- At least 1 review of written documentation of the meeting
- At least 3 different observers

Relevant Milestones

1 **COM 1.1 Develop trusting and supportive relationships with families in distress**

2 **COM 3.1** Convey information about diagnosis and prognosis clearly and compassionately

3 **COM 3.1** Use appropriate language and avoid medical jargon

4 **COM 3.1 Use strategies to verify and validate the understanding of the patient and/or family**

5 **COM 4.1 Ask about and integrate rituals and end-of-life practices in keeping with the patient's and family's cultural, spiritual and religious beliefs**

6 **ME 2.3 Work with the patient and family to establish goals of care**

7 **ME 2.4 Develop palliative care management plans that align with patient and family goals of care**

8 **COM 1.4** Respond to non-verbal communication and use appropriate non-verbal behaviours to enhance communication

9 **COM 1.5** Manage emotionally charged conversations including breaking bad news and end of life conversations

10 **COM 1.5** Recognize when personal feelings in an encounter are valuable clues to the patient's emotional state

11 **COM 5.1** Document the clinical encounter to accurately reflect discussion and decisions

12 **HA 1.1** Facilitate access to bereavement support for a patient's family, as appropriate

13 **P 1.3 Recognize and respond to the moral and ethical challenges in end-of-life care**

14 **P 4.1** Exhibit self-awareness, recognizing and managing the impact of end-of-life care on personal well-being and professional performance

Critical Care Medicine: Foundations EPA #5

Co-leading multidisciplinary teams

Key Features:

- This EPA focuses on the resident's role in leading rounds and the coordination of patient care throughout the clinical day.
- This includes managing time and resources, building consensus, directing discussions, collaborating with consulting services, teaching junior trainees, engaging family members as appropriate, and ensuring clear communication among all team members.
- This EPA does not include the overall responsibility for patient care, that is a responsibility of a later stage, nor making management decisions for individual patients, providing updates to families, and participating in family meetings.

Assessment Plan:

Direct observation by attending physician or senior resident in CCM with input from the interprofessional team, junior trainees, and/or consultants

Use form 1.

Collect 5 observations of achievement

- At least 3 different observers

CanMEDS Milestones:

1 **ME 1.5** Prioritize among patients based on clinical acuity

2 **L 4.1 Manage time and prioritize tasks**

3 **COL 1.2** Make effective use of the scope and expertise of other health care professionals

4 **COL 2.1 Delegate tasks and responsibilities in a respectful manner**

5 **COL 1.3** Contribute to quality patient care by sharing medical expertise

6 **COL 1.3 Communicate effectively with other physicians and health professionals**

7 **COL 2.2 Work effectively with other health care professionals to develop plans for clinical care when there are differences in opinion and/or recommendations**

8 **COL 1.3 Actively seek out and consider diverse perspectives within the multidisciplinary team**

9 **L 4.1 Integrate supervisory and teaching responsibilities into the overall management of the clinical service**

10 **ME 3.1** Integrate planned procedures and therapies into the overall plan of care

11 **L 2.1 Allocate health care resources for optimal patient care**

12 **P 1.1** Demonstrate appropriate professional behaviours

13 **P 1.1** Respond punctually to requests from other health care professionals

Critical Care Medicine: Core EPA #1

Managing patients with respiratory failure

Key Features:

- This EPA focuses on applying knowledge of respiratory physiology and pathophysiology for different modes of ventilation, while considering the interactions with other organ systems (e.g., cardiac and neurologic).
- This EPA includes assessment, diagnosis and management of hypoxemia, hypercarbia and mixed respiratory failure, including patients requiring mechanical ventilation to support other organ failure, and patients with complex respiratory failure including severe acute respiratory distress syndrome (ARDS).
- This EPA includes recognizing and managing complications from mechanical ventilation, as well as weaning patients from ventilation, and identifying candidates for tracheostomy.
- This EPA does not include airway management except the management of tracheostomies. It does not include routine indications for mechanical ventilation (i.e., postop facial surgery), nor does it include the chronic technology dependent patient.

Assessment Plan:

Direct observation and/or case discussion by a supervisor

Use Form 1. Form collects information on:

- ARDS: yes; no

Collect 8 observations of achievement

- At least 3 patients with ARDS
- At least 4 different observers

CanMEDS Milestones:

1 **ME 1.3** Apply knowledge of respiratory physiology and cardiopulmonary interactions

2 **ME 1.6** Adapt care to address complexity in the patient situation

3 **ME 1.4** Perform focused clinical assessments that address all relevant issues

4 **ME 2.2 Integrate information from the clinical assessment to formulate an understanding of the patient's condition**

5 **ME 2.2 Interpret diagnostic imaging of the respiratory system**

6 **ME 2.4 Develop and implement management plans for patients requiring non-invasive or invasive ventilation, including weaning from prolonged and/or complicated mechanical ventilation**

7 **ME 3.1 Determine the need for and timing of tracheostomy**

8 **COL 1.3** Communicate effectively with other physicians and health professionals

9 **S 3.4** Integrate best evidence and clinical expertise into decision-making

Critical Care Medicine: Core EPA #2

Managing patients with multisystem organ dysfunction

Key Features:

- This EPA includes the management of patients with multisystem organ dysfunction that may arise from any pathophysiology.
- This EPA includes the monitoring of organ dysfunction, managing medications based on the pharmacology and degree of organ dysfunction, and supporting the patient to allow for organ recovery where possible.

Assessment Plan:

Direct observation or case review by supervisor

Use Form 1.

Collect 10 observations of achievement

- At least 5 different observers

CanMEDS Milestones:

1 **ME 1.6** Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice

2 **ME 1.4** Perform focused clinical assessments that address all relevant issues

3 **ME 2.1** Consider clinical urgency, feasibility, availability of resources, and comorbidities in determining priorities to be addressed

4 **ME 2.4** Develop, in collaboration with the patient and family, a plan to deal with clinical uncertainty

5 **ME 2.4 Establish a patient-centred management plan that considers all of the patient's health problems**

6 **ME 2.2 Prescribe and adjust medications in the setting of organ dysfunction**

7 **ME 3.3** Prioritize a procedure or therapy, considering clinical urgency and potential for deterioration

8 **ME 4.1 Implement a patient-centred plan that supports ongoing monitoring of clinical status and response to treatment**

9 **ME 4.1** Ensure detailed and complete follow-up and handover of all patients under the resident's care

10 **ME 4.1 Determine the need and timing of referral to other specialists**

11 **COM 5.1** Document management plans in an accurate, complete, timely and accessible manner

12 **COL 1.2** Consult effectively and in a timely manner with other members of the health care team and other services

13 **ME 2.1 Identify patients for whom the patient perceived burden of disease modifying therapy or investigations is greater than the clinical benefit**

14 **ME 2.3** Recognize and respond to signs that it is time to transition care away from a disease modifying approach

15 **L 2.1** Use clinical judgement to make optimal use of limited resources

16 **P 1.3** Manage ethical issues encountered in the clinical setting

17 **S 3.4** Integrate best evidence and clinical expertise into decision-making

Critical Care Medicine: Core EPA #3

Managing the resuscitation of critically ill patients

Key Features:

- This EPA includes the rapid detection and correction of life-threatening situations such as hypoxia, end organ hypoperfusion, dysrhythmias and raised intracranial pressure, as well as the management of patients in cardiac arrest.
- It may include patients with a variety of underlying medical comorbidities and in a variety of clinical situations, such as traumatic shock, septic shock, traumatic brain injury, and cardiogenic shock.
- It includes the application of advanced crisis resources management skills to guide the team functioning.

Assessment Plan:

Direct observation by supervisor

Use Form 1. Form collects information on:

- Case mix: cardiac arrest; respiratory failure; sepsis; shock; trauma; other (write in)

Collect 8 observations of achievement

- At least 2 cardiac arrests
- At least 5 other case mixes
- At least 4 different observers

CanMEDS Milestones:

1 **ME 2.2** Provide assessment and initial stabilization of ABCs

2 **ME 2.4** Provide concurrent treatment and ongoing assessment of the patient's clinical condition

3 **ME 2.4 Reassess, re-evaluate and adjust resuscitative and diagnostic efforts as appropriate**

4 **ME 5.2 Demonstrate situational awareness, avoid fixation error**

5 **ME 4.1 Ask for additional assistance and/or other services when indicated**

6 **COL 1.2 Delegate tasks and direct team members to aid in resuscitation**

7 **COL 1.3 Use closed loop communication**

8 **P 4.1** Maintain capacity for professional clinical performance in stressful situations

9 **ME 1.4 Act decisively and maintain control of crisis situations**

10 **ME 2.2 Recognize when ongoing resuscitation efforts are no longer effective and should be discontinued**

11 **ME 2.4** Manage hemodynamic support and monitoring

12 **ME 2.4** Manage non-invasive and/or invasive ventilation

13 **ME 3.1** Integrate planned procedures or therapies into resuscitative efforts

14 **ME 3.3** Triage a procedure or therapy, taking into account clinical urgency, potential for deterioration, and available resources

15 **L 4.2** Establish clear leadership in resuscitative efforts

16 **COL 1.2** Seek and respond to input from other health care professionals

Critical Care Medicine: Core EPA #4

Performing Procedures: Airway management

Key features

- This EPA focuses on determining which procedures are necessary and appropriate to the patient's condition, and performing the following procedures required for the care of complex or unstable patients, including bag-mask ventilation (BMV) with oropharyngeal airway (OPA); bronchoscopy (excluding fibreoptic intubation); intubation in simple/stable and complex/unstable settings; cricothyroidotomy.
- This EPA may be observed in clinical or simulation settings.

Assessment Plan:

Direct observation by staff physician, or TTP resident

Use Form 2. Form collects information on:

- Procedure (select all that apply): OPA; BVM; intubation; bronchoscopy; cricothyrotomy
- Complex/unstable scenario: yes; no
- Setting: clinical; simulation

Collect 11 observations of achievement

- At least 1 BVM with OPA insertion in a clinical setting
- At least 3 complex/unstable intubations in a clinical setting
- At least 1 non-complex/stable intubation in a clinical setting
- At least 4 bronchoscopies in a clinical setting
- At least 1 cricothyroidotomy (simulation acceptable)
- At least 3 different staff physician observers

CanMEDS Milestones:

1 ME 3.1 Preprocedure plan: Gather/assess required information to reach diagnosis and determine correct procedure required

2 ME 3.4 Case preparation: Patient correctly prepared and positioned, understands approach and required instruments, prepared to deal with probable complications

3 ME 1.3 Knowledge of specific procedural steps: Understands steps of procedure, potential risks, and means to avoid/overcome them

4 ME 3.4 Technical performance: Efficiently performs steps, avoiding pitfalls and respecting soft tissues

5 ME 3.4 Visuospatial skills: 3D spatial orientation and able to position instruments/hardware where intended

6 ME 3.4 Efficiency and flow: Obvious planned course of procedure with economy of movement and flow

7 ME 3.4 Postprocedure plan: Appropriate complete post procedure plan

8 COL 1.3 Professional and effective communication/utilization of staff

Critical Care Medicine: Core EPA #5

Performing procedures: Vascular access

Key features

- This EPA focuses on determining which procedures are necessary and appropriate to the patient's condition, and performing the following procedures required for the care of complex or unstable patients, including arterial line insertion; central venous line insertion; dialysis catheter insertion.
- This EPA includes using ultrasonography for procedural guidance, where appropriate.
- This EPA may be observed in clinical or simulation settings.

Assessment Plan:

Direct observation by attending or consultant physician, or TTP resident

Use Form 2. Form collects information on:

- Procedure (select all that apply): arterial line; central venous line; dialysis catheter
- Complex/unstable: yes; no
- Site: jugular; subclavian; femoral; radial
- Setting: clinical; simulation

Collect 20 observations of achievement

- At least 7 arterial lines in clinical setting with 3 different observers
- At least 4 complex/unstable arterial lines
- At least 1 arterial line site other than radial
- At least 11 central venous lines in a variety of sites (subclavian may be in simulation)
- At least 8 complex/unstable central venous lines in a clinical setting
- At least 2 dialysis catheter insertions in a clinical setting

CanMEDS Milestones:

1 ME 3.1 Preprocedure plan: Gather/assess required information to reach diagnosis and determine correct procedure required

2 ME 3.4 Case preparation: Patient correctly prepared and positioned, understands approach and required instruments, prepared to deal with probable complications

3 ME 1.3 Knowledge of specific procedural steps: Understands steps of procedure, potential risks, and means to avoid/overcome them

4 ME 3.4 Technical performance: Efficiently performs steps, avoiding pitfalls and respecting soft tissues

5 ME 3.4 Visuospatial skills: 3D spatial orientation and able to position instruments/hardware where intended

6 ME 3.4 Efficiency and flow: Obvious planned course of procedure with economy of movement and flow

7 ME 3.4 Postprocedure plan: Appropriate complete post procedure plan

8 COL 1.3 Professional and effective communication/utilization of staff

Critical Care Medicine: Core EPA #6

Performing procedures: Chest tube, paracentesis, lumbar punctures, and temporary transvenous pacemaker insertion

Key Features:

- This EPA focuses on chest tube insertion, paracentesis, and lumbar punctures, determining the clinical necessity of the procedure, and performing it appropriately, including chest tube insertion (open and Seldinger); lumbar puncture; paracentesis; temporary transvenous pacemaker insertion.
- This EPA includes using ultrasonography for procedural guidance where appropriate.

Assessment Plan:

Direct observation by attending or consultant physician, or TTP resident

Use Form 2. Form collects information on:

- Procedure: chest tube (open); chest tube (Seldinger); lumbar puncture; paracentesis; temporary transvenous pacemaker insertion
- Setting: clinical; simulation

Collect 6 observations of achievement

- At least 2 paracenteses
- At least 2 lumbar punctures
- At least 1 open chest tube
- At least 1 Seldinger chest tube
- At least 1 temporary transvenous pacemaker insertion (clinical preferred, simulation acceptable)

CanMEDS Milestones:

1 ME 3.1 Preprocedure plan: Gather/assess required information to reach diagnosis and determine correct procedure required

2 ME 3.4 Case preparation: Patient correctly prepared and positioned, understands approach and required instruments, prepared to deal with probable complications

3 ME 1.3 Knowledge of specific procedural steps: Understands steps of procedure, potential risks, and means to avoid/overcome them

4 ME 3.4 Technical performance: Efficiently performs steps, avoiding pitfalls and respecting soft tissues

5 ME 3.4 Visuospatial skills: 3D spatial orientation and able to position instruments/hardware where intended

6 ME 3.4 Efficiency and flow: Obvious planned course of procedure with economy of movement and flow

7 ME 3.4 Postprocedure plan: Appropriate complete post procedure plan

8 COL 1.3 Professional and effective communication/utilization of staff

Critical Care Medicine: Core EPA #7

Performing Point-of-Care ultrasound

Key Features:

- This EPA includes selection, performance and interpretation of point-of-care ultrasound (POCUS) to guide the assessment and ongoing management of patients.
- Image acquisition is required for each observation of achievement.
- Lung studies include assessment for normal lung, B-lines, pleural effusions, consolidation and the presence or absence of lung sliding.
- Cardiac studies include assessment of global cardiac function, pericardial effusions, right ventricular size and function and inferior vena cava variability.
- Abdominal studies are limited to the assessment for ascites.

Assessment Plan:

Direct observation and/or review of images by supervisor

Use Form 2. Form collects information on

- POCUS study: lung; cardiac and volume status; abdominal

Collect 15 observations of achievement

- At least 5 lung studies
- At least 5 cardiac and volume status studies
- At least 5 abdominal studies

CanMEDS Milestones:

1 ME 3.4 Adjust instrument settings appropriately to optimize image quality

2 ME 3.4 Obtain standard views

3 ME 2.2 Recognize clinically significant findings in a POCUS examination

Critical Care Medicine: Core EPA #8

Caring for patients with prolonged ICU stay and/or organ support-dependent critical illness and their primary caregiver(s)

Key Features:

- This EPA includes the coordination and care for long-term and/or organ support-dependent critically ill patients in the ICU or other settings.
- This EPA requires longitudinal engagement with the patient, family, and multidisciplinary team.
- It includes tasks such as orchestrating family meetings, developing and leading the implementation of care plans including possible homecare, or transfer to community hospital or long-term care facilities.
- It requires the coordination of multidisciplinary teams and advocacy at the patient and system level.

Assessment Plan:

Direct observation and/or case discussion by supervisor with or without input from physiotherapist, social worker, registered respiratory therapist, patient or family.

Use Form 1.

Collect 2 observation of achievement

- At least 2 different observers

CanMEDS Milestones:

1 **ME 1.6** Adapt care as the complexity, uncertainty, and ambiguity of the patient's clinical situation evolves

2 **ME 2.1** Identify patients for whom the patient perceived burden of disease modifying therapy or investigations is greater than the clinical benefit

3 **ME 2.3** Recognize and respond to signs that it is time to transition care away from a disease modifying approach

4 **COM 2.1** Gather information about the patient's beliefs, values, preferences, context and expectations with regards to their care

5 **ME 2.3** Address the impact of the medical condition on the patients' ability to pursue life goals and purposes

6 **ME 2.3 Work with the patient and family to establish goals of care**

7 **COM 3.1** Provide information on diagnosis and prognosis in a clear, compassionate, and respectful manner

8 **COM 4.3 Use communication skills and strategies that help the patient and family make informed decisions**

9 **ME 2.2** Select investigations and therapies appropriate to the patient's goals of care

10 **ME 2.4 Develop and implement management plans that support achievement of the patient's goals of care**

11 **ME 4.1 Coordinate ongoing care when multiple physicians and health care professionals are involved**

12 **HA 1.1 Facilitate timely patient access to services and resources**

Critical Care Medicine: Core EPA #9

Identifying, assessing, and managing potential organ donors

Key Features:

- This EPA includes the identification of potential organ donors (by both neurological and circulatory criteria), referral to the local organ donation organization or program, and communicating with families about the opportunity for donation, but does not include obtaining consent for donation.
- This EPA also includes the assessment of death by neurological criteria, the physiological management of the potential organ donor, and collaboration with the donation physician, donation coordinator and other members of the donation team.

Assessment Plan:

Direct observation and/or case review by supervisor

Use Form 1. Form collects information on:

- Etiology: Death by circulatory criteria (DCC); death by neurological criteria (DNC)

Collect 3 observations of achievement

- At least 1 of each etiology
- At least 2 DNC declaration

CanMEDS Milestones:

1. **ME 2.2 Recognize and respond to clinical features that identify opportunities for organ donation**

2. **COM 3.1 Convey the option of organ and tissue donation as part of end-of-life discussions with family members**

3. **COM 4.1 Communicate with patients and families in a manner that is respectful, non-judgmental, and culturally aware**

4. **HA 1.1** Facilitate access to bereavement support for a patient's family, as appropriate

5. **COM 5.1 Document the organ donation assessment and discussion, completing all required documentation**

6. **ME 2.4 Develop and implement management plans to maintain organ donor homeostasis with appropriate hemodynamic, respiratory, temperature, urine output, fluid, electrolyte, and glucose targets**

7. **COL 1.2 Work effectively with organ procurement organization personnel, transplant surgeons, and in-hospital diagnostic services to ensure complete evaluation of individual organ/tissue suitability for transplant**

8. **ME 4.1** Establish plans for ongoing care of potential organ donors, incorporating considerations of patient comfort and family concerns

9. **P 1.3** Manage ethical issues encountered in the clinical setting

10. **ME 2.2 Exclude reversible causes of coma**

11. **ME 2.2 Assess brainstem reflexes and response to pain**

12. **ME 2.2 Perform an apnea test**

13. **ME 2.2 Use ancillary testing when appropriate**

14. **ME 1.3 Apply guidelines for the determination of death by neurological criteria (DNC) and death by circulatory criteria (DCC)**

15. **P 3.1** Adhere to regulations regarding DNC and DCC declaration

Critical Care Medicine: Core EPA #10

Managing the transport of patients who are critically ill

Key Features:

- This EPA focuses on managing the transport of critically ill patients within the hospital as well as between healthcare centres, by ground or by air.
- It may include being physically present during transfer or providing advice to the transferring centre and transport team.
- This EPA does not include managing discharge nor facilitating the transfer of patients to a chronic care facility.
- This EPA may be observed in a simulated activity.

Assessment Plan:

Direct observation or case review by supervisor

Use Form 1. Form collects information on:

- Transport context: in-hospital; interhospital

Collect 2 observations of achievement

- At least 1 in-hospital transport
- At least 1 interhospital transport (may be simulation or call line)

CanMEDS Milestones:

1. **ME 2.2** Interpret clinical information gathered by another health professional, along with the results of investigations, for the purposes of diagnosis and management

2. **ME 2.4 Determine the setting of care appropriate for the patient's health needs**

3. **ME 2.4 Plan the logistics of transfer including stabilization and procedures prior to transfer, equipment and personnel requirements, methods of monitoring and assessment during transport**

4. **COL 3.2 Demonstrate safe handover of care, using both verbal and written communication, during a patient transition to a different health care professional, setting, or stage of care**

5. **COM 5.1 Document telephone advice provided, and the care provided during transport**

Critical Care Medicine: Core EPA #11

Leading daily clinical rounds

Key Features:

- This EPA focuses on leading the daily care for all patients in the ICU.
- This includes leading team discussions and developing management plans for all patients (complex and routine), guiding junior residents through their tasks, conducting investigations, communicating and engaging other health professionals as part of the interprofessional team, and seeking and providing appropriate consults to other services.
- It includes transfer and discharge planning, as well as communication with patients and families during rounds.
- This EPA requires time management skills to balance patient care with teaching responsibilities, consideration of bed management issues, triaging of consults outside the ICU, and the management of disruptions.
- This EPA does not include the safety competencies, end of life discussions nor formal family meetings.

Assessment Plan:

Direct and indirect observation by supervisor

Use form 1.

Collect 5 observations of achievement

- At least 3 observers

CanMEDS Milestones:

1 **ME 1.3** Apply a broad base and depth of knowledge in clinical and biomedical sciences to manage the breadth of patient presentations in the ICU

2 **ME 1.4** Perform focused clinical assessments that address all relevant issues

3 **ME 1.5 Prioritize among patients based on clinical acuity**

4 **ME 1.5** Carry out professional duties in the face of multiple, competing demands

5 **ME 1.6** Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice

6 **ME 2.4 Establish patient centered management plans**

7 **L 4.1 Integrate supervisory and teaching responsibilities into the overall management of the clinical service**

8 **P 4.1** Manage the mental and physical challenges that impact physician wellness and/or performance in demanding or stressful clinical settings

9 **COL 2.1 Delegate tasks and responsibilities in a respectful manner**

10 **L 2.1** Allocate health care resources for optimal patient care

11 **L 4.1 Manage time and prioritize tasks**

12 **S 2.4** Demonstrate basic skills in teaching others

13 **S 3.4** Integrate best evidence and clinical expertise into decision-making

Critical Care Medicine: Core EPA #12

Supervising, assessing, and coaching junior colleagues

Key Features:

- This EPA focuses on providing constructive feedback in a manner aligned with coaching and/or performance improvement and recognizing the need for potential remediation.
- This includes assisting learners (rotating residents/students) in difficulty.

Assessment Plan:

Direct observation by supervisor with input from learner(s)

Use Form 1.

Collect 3 observations of achievement

- At least 3 different observers

CanMEDS Milestones:

1 P 1.1 Complete learner assessments in a timely fashion

2 S 2.5 Identify learner behaviors to support / continue as well as those for improvement

3 S 2.5 Provide specific suggestions for improvement of performance

4 S 2.5 Provide narrative comments that support coaching / assessment

Critical Care Medicine: Core #13

Debriefing routine resuscitations and critical events

Key Features:

- This EPA includes leading the healthcare team in the immediate debriefing post critical event to identify opportunities for future improvement in patient care.
- It includes developing a psychologically safe environment in which team members' views are encouraged and respected.
- This EPA includes identification of the need for professional resources for emotional and psychological support for the health care team, if appropriate.
- This EPA does not include systems-level review, such as those that would be conducted for sentinel events or other patient safety concerns.

Assessment Plan:

Direct observation by supervisor

Use Form 1.

Collect 2 observations of achievement

- At least 2 separate debriefing events
- At least 2 different observers

CanMEDS Milestones:

1 **L 1.2 Establish a safe environment for debriefing critical events**

2 **COL 1.3** Convey the purpose of debriefing an event to the health care team

3 **COL 1.3 Facilitate discussions within the health care team, ensuring everyone has the opportunity to participate**

4 **S 2.5 Role model self-assessment and feedback seeking behaviour**

5 **L 1.2 Encourage all members of the team to identify opportunities to improve patient care**

6 **L 1.1 Summarize debriefing discussions, identifying potential improvements in health care delivery**

7 **P 4.3** Recognize, support and respond effectively to colleagues in need

Critical Care Medicine: Transition to Practice EPA #1

Running an ICU service

Key Features:

- This EPA focuses on managing all aspects of patient care in the ICU in the role of junior attending.
- This EPA focuses on managing the flow through the ICU: triaging referrals, managing discharges, surge and epidemic planning, delegation of responsibilities, collaborating with other health professionals and demonstrating judicious use of resources.
- This EPA may be observed in and out of the ICU, including remote sites.
- The observation of this EPA must be based on a block of time of at least a day, and preferably a week.
- The observation of this EPA is not based on running rounds or providing care for individual patients, but rather the management of the unit as a whole.

Assessment Plan:

Direct and/or indirect observation by physician

Use Form 1.

Collect 4 observations of achievement

- At least 3 different observers
- At least 4 separate encounters

CanMEDS Milestones:

1 **ME 1.1** Demonstrate responsibility and accountability for decisions regarding patient care

2 **ME 1.5** Prioritize among patients based on clinical acuity

3 **ME 1.5** Carry out professional duties in the face of multiple, competing demands

4 **L 2.1 Allocate health care resources for optimal patient care**

5 **S 3.4 Integrate best evidence and clinical expertise into decision-making**

6 **ME 4.1** Coordinate the involvement of consulting services in patient care

7 **COL 2.2 Work effectively with other health care professionals to develop plans for clinical care when there are differences in opinion and/or recommendations**

8 **L 4.1 Manage time and prioritize tasks**

9 **L 4.1** Integrate supervisory and teaching responsibilities into the overall management of the clinical service

10 **P 4.1 Manage the mental and physical challenges that impact physician wellness and/or performance in demanding or stressful clinical settings**