

**2016**

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VERSION 1.1**

*NOTE: Throughout this document, references to the patient's family are intended to include all those who are personally significant to the patient and are concerned with his or her care, including, according to the patient's circumstances, family members, partners, caregivers, legal guardians, and substitute decision-makers.*

*For the purposes of this document, the word patient refers to all people exposed to a hyperbaric environment, including individuals with a medical condition undergoing treatment with hyperbaric oxygen, as well as divers and any staff experiencing adverse effects of hyperbaric exposure.*

## **DEFINITION**

Hyperbaric Medicine is that area of enhanced competence that is concerned with physiological changes, medical disorders, and therapeutic uses related to altered pressure environments, hyperbaric oxygen treatment, and safe decompression. This area of enhanced competence is applied in two settings: in **clinical hyperbaric medicine**, hyperbaric oxygen is applied for the treatment of approved elective and emergency medical conditions; and in **diving medicine**, with assessment of fitness for, hazards of, standards for, and medical disorders associated with increased pressure environments as well as advanced decompression procedures, including occupational, military, scientific, recreational, and technical diving.

## **ELIGIBILITY REQUIREMENTS**

The Area of Focused Competence (AFC) trainee must have Royal College certification, or equivalent, in any primary specialty or College of Family Physicians Canada (CFPC) certification, or equivalent, or enrolment in a residency training program leading to certification by one of these bodies (see requirements for these qualifications). All trainees must be certified in their primary specialty in order to be eligible to submit a Royal College certification portfolio in Hyperbaric Medicine.

Family physicians who obtained their medical license in Canada prior to 1992 are also eligible for the certification portfolio in Hyperbaric Medicine and are exempt from the requirement for certification by CFPC.

## GOALS

Upon completion of training, an AFC diplomate is expected to function effectively as a competent specialist in Hyperbaric Medicine, capable of an enhanced practice in this area of focused competence (AFC). The AFC trainee must acquire a working knowledge of the theoretical basis of the discipline, including its foundations in science and research, and must be able to incorporate evolving medical evidence into their clinical practice.

The practice of Hyperbaric Medicine is divided into two streams: clinical hyperbaric medicine and diving medicine. The two streams share many foundational competencies but each also has its own unique skill set; specialists in Hyperbaric Medicine may practice in one or both of these streams.

Thus, the discipline of Hyperbaric Medicine includes responsibility for:

<b>Clinical Hyperbaric Medicine</b>	<b>Diving Medicine</b>
Provision of elective and emergency consultations, on-call services, and advice to emergency departments and health professionals for patients who may require hyperbaric oxygen treatment (HBOT)	Assessment of medical fitness for the diving and/or hyperbaric environment(s)
Medical management of the patient throughout the pre, intra, and post hyperbaric exposure period, including medical oversight of clinical hyperbaric treatments, for both elective and emergency indications	Medical oversight of diving operations, other compressed breathing gas operations and advanced recompression treatment
Prevention and management of complications in the peri-hyperbaric period	
Clinical leadership in maintaining the safety of operating conditions in the hyperbaric environment	
Quality assurance activities relevant to Hyperbaric Medicine	
Education of governments, other physicians, and other health professions in the role of Hyperbaric Medicine	
Advancement of the discipline of Hyperbaric Medicine through scholarship	

Diplomates must demonstrate the requisite knowledge, skills, and behaviours for effective patient-centred care and service to a diverse population. In all aspects of specialist practice, the diplomate must be able to address ethical issues and issues of gender, sexual orientation, age, culture, beliefs, and ethnicity in a professional manner.

At the completion of training, the diplomate will have acquired the following competencies, as applicable to at least one of the two streams of Hyperbaric Medicine, and will function effectively as a:

## Medical Expert

### **Definition:**

As *Medical Experts*, Hyperbaric Medicine diplomates integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centred care. *Medical Expert* is the central physician Role in the CanMEDS framework.

**Key and Enabling Competencies: Hyperbaric Medicine diplomates are able to...**

### **1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centred medical care**

- 1.1. Perform a consultation effectively, including the presentation of well-documented assessments and recommendations in oral, written, and/or electronic form, in response to a request from another health care professional
- 1.2. Demonstrate use of all CanMEDS competencies relevant to Hyperbaric Medicine
- 1.3. Identify and appropriately respond to relevant ethical issues arising in patient care
- 1.4. Demonstrate the ability to prioritize professional duties when faced with multiple patients and problems
- 1.5. Demonstrate compassionate and patient-centred care
- 1.6. Recognize and respond to the ethical dimensions in medical decision-making
- 1.7. Demonstrate medical expertise in situations other than patient care, such as providing expert legal testimony or advising governments, as needed

### **2. Establish and maintain clinical knowledge, skills, and behaviours appropriate to Hyperbaric Medicine**

- 2.1. Apply knowledge of the clinical, socio-behavioural, and fundamental biomedical sciences relevant to Hyperbaric Medicine
  - 2.1.1. Physics and physiology of gases within the body, and the effects of ambient pressure
  - 2.1.2. Physiologic effects of hyperoxia and hypoxia
  - 2.1.3. Operational aspects of hyperbaric oxygen treatment
    - 2.1.3.1. Hyperbaric chamber systems
    - 2.1.3.2. Use of and indications for hyperbaric oxygen treatment (HBOT)
    - 2.1.3.3. HBOT tables, protocols and schedules
    - 2.1.3.4. Medical gas systems and breathing gas purity
    - 2.1.3.5. Thermal control and hazards in hyperbaric environments

- 2.1.3.6. Complications and adverse effects of hyperbaric environments
  - 2.1.3.6.1. Oxygen toxicity
  - 2.1.3.6.2. Decompression sickness
  - 2.1.3.6.3. Omitted decompression
  - 2.1.3.6.4. Arterial gas embolism
  - 2.1.3.6.5. Barotrauma: auditory, sinus
  - 2.1.3.6.6. Tension pneumothorax
  - 2.1.3.6.7. Obstructed airway
  - 2.1.3.6.8. Congestive heart failure
  - 2.1.3.6.9. Acute hypertension
  - 2.1.3.6.10. Hypo or hyperglycemia
  - 2.1.3.6.11. Anxiety
  - 2.1.3.6.12. Claustrophobia
- 2.1.4. Medical conditions that affect fitness to enter a hyperbaric environment, including but not limited to chronic sinus conditions, as well as cardiovascular, respiratory, neurologic, and psychiatric disorders
- 2.1.5. Application of pain management principles in the hyperbaric environment
- 2.1.6. Use of medications, including but not limited to changes in pharmacodynamics and pharmacokinetics, in the hyperbaric environment
- 2.1.7. Application of the principles of resuscitation, critical care and emergency procedures in the hyperbaric environment
  - 2.1.7.1. Resuscitation protocols
  - 2.1.7.2. Airway management
  - 2.1.7.3. Ventilators and ventilator support
  - 2.1.7.4. Monitoring of the patient
  - 2.1.7.5. Intravenous fluid management
  - 2.1.7.6. Management of vascular lines
  - 2.1.7.7. Sedation and anesthesia
- 2.2. Describe the CanMEDS framework of competencies relevant to Hyperbaric Medicine
- 2.3. Apply lifelong learning skills of the Scholar Role to implement a personal program to keep up to date, and enhance areas of professional competence
- 2.4. Integrate the available best evidence and best practices to enhance the quality of care and patient safety in Hyperbaric Medicine

**3. Perform a complete and appropriate assessment of a patient**

- 3.1. Identify and effectively explore issues to be addressed in a patient encounter, including the patient's context and preferences
- 3.2. Elicit a history that is relevant, concise, and accurate to context and preferences, for the purposes of diagnosis, management, health promotion, and disease prevention
- 3.3. Perform a focused physical examination that is relevant and accurate for the purposes of diagnosis, management, health promotion, and disease prevention
  - 3.3.1. Assessment for changes in visual acuity
  - 3.3.2. Otoscopic examination for assessment of risk, or occurrence, of auditory barotrauma
  - 3.3.3. Neurologic examination
- 3.4. Select medically appropriate investigative methods in a resource-effective and ethical manner
- 3.5. Demonstrate effective clinical problem solving and judgment to address the patient's problems, including interpreting available data and integrating information to generate differential diagnoses and management plans
  - 3.5.1. Determine a patient's fitness for hyperbaric oxygen exposure considering the effect of the hyperbaric environment on coexisting medical conditions
  - 3.5.2. Manage medical conditions arising in patients exposed to a hyperbaric environment
  - 3.5.3. Recognize the indications for emergency and elective myringotomy
  - 3.5.4. Recognize and respond to circumstances that require postponement, modification or cancellation of HBOT or diving operations
  - 3.5.5. Interpret the results of vascular assessment including but not limited to transcutaneous oxygen monitoring (TCOM) and laser Doppler assessment (*clinical hyperbaric medicine stream only*)
  - 3.5.6. Assess and manage wounds in patient undergoing HBOT, including but not limited to recognition of indications for wound debridement (*clinical hyperbaric medicine stream only*)

**4. Use preventive and therapeutic interventions effectively**

- 4.1. Implement a management plan in collaboration with a patient and the patient's family, or a diver or a diving operator
- 4.2. Demonstrate appropriate and timely application of preventive and therapeutic interventions relevant to Hyperbaric Medicine
  - 4.2.1. Airway management and ventilatory support
  - 4.2.2. Measures to prevent barotrauma
  - 4.2.3. Wound care (*clinical hyperbaric medicine stream only*)

- 4.2.4. Nutritional management (*clinical hyperbaric medicine stream only*)
- 4.2.5. Diabetes management
- 4.2.6. Sedation for HBOT
- 4.2.7. Pain management
- 4.2.8. Hyperbaric oxygen treatment
- 4.2.9. Decompression

4.3. Obtain appropriate informed consent for therapies

4.4. Ensure patients receive appropriate end-of-life care (*clinical hyperbaric medicine stream only*)

**5. Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic**

5.1. Demonstrate effective, appropriate, and timely performance or interpretation of diagnostic procedures relevant to Hyperbaric Medicine

5.2. Demonstrate effective, appropriate, and timely performance of therapeutic procedures relevant to Hyperbaric Medicine

5.2.1. Endotracheal intubation

5.2.2. Chest tube insertion/thoracentesis

5.3. Obtain appropriate informed consent for procedures

5.4. Document and disseminate information related to procedures performed and their outcomes

5.4.1. Collect and utilize photographic documentation of wounds in the course of treatment (*clinical hyperbaric medicine stream only*)

5.5. Ensure adequate followup is arranged for procedures performed

**6. Seek appropriate consultation from other health professionals, recognizing the limits of their expertise**

6.1. Demonstrate insight into their own limits of expertise

6.2. Demonstrate effective, appropriate, and timely consultation of another health professional, as needed for optimal patient care

6.2.1. Identify and respond to situations requiring consultation with other specialist physicians, and other health professionals including but not limited to orthotics and wound care services

6.3. Arrange appropriate followup care services for patients and their families

## **Communicator**

### **Definition:**

As *Communicators*, Hyperbaric Medicine diplomates effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

**Key and Enabling Competencies: Hyperbaric Medicine diplomates are able to...**

### **1. Develop rapport, trust, and ethical therapeutic relationships with patients and families**

- 1.1. Recognize that being a good communicator is a core clinical skill for a physician, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction, adherence, and improved clinical outcomes
- 1.2. Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty, and empathy
- 1.3. Respect patient confidentiality, privacy, and autonomy
- 1.4. Listen effectively
- 1.5. Be aware of and responsive to nonverbal cues
- 1.6. Facilitate a structured clinical encounter effectively

### **2. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals**

- 2.1. Gather information about a disease and about a patient's beliefs, concerns, expectations, and illness experience
- 2.2. Seek out and synthesize relevant information from other sources, such as other professionals, a patient's family, and diving operators, while respecting individual privacy and confidentiality

### **3. Convey relevant information and explanations accurately to patients and families, colleagues and other professionals**

- 3.1. Deliver information to a patient and family, colleagues, and other professionals in a humane manner and in such a way that it is understandable and encourages discussion and participation in decision-making
- 3.2. Convey information clearly to diving operators, medical regulatory authorities, and others to facilitate understanding of risk in the hyperbaric environment and allow non-medical decision makers to make appropriate operational decisions

### **4. Develop a common understanding on issues, problems and plans with patients, families, and other professionals to develop a shared plan of care**

- 4.1. Identify and effectively explore problems to be addressed from a patient

- encounter, including the patient's context, responses, concerns, and preferences
- 4.2. Respect diversity and differences, including but not limited to the impact of gender, religion, and cultural beliefs on decision-making
  - 4.3. Encourage discussion, questions, and interaction in the encounter
  - 4.4. Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care
  - 4.5. Address challenging communication issues effectively, including but not limited to obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstanding
- 5. Convey oral, written and/or electronic information effectively about a medical encounter**
- 5.1. Maintain clear, concise, accurate, and appropriate written, electronic, or photographic records of clinical encounters and plans
  - 5.2. Present oral reports of clinical encounters and plans
  - 5.3. Convey medical information appropriately to ensure safe transfer of care
- 6. Present medical information effectively to the public or media about a medical issue**

## **Collaborator**

### ***Definition:***

As *Collaborators*, Hyperbaric Medicine diplomates effectively work within a health care team or diving team to achieve optimal patient care.

### ***Key and Enabling Competencies: Hyperbaric Medicine diplomates are able to...***

- 1. Participate effectively and appropriately in an interprofessional health care team or diving team**
  - 1.1. Describe the diplomate's roles and responsibilities to other professionals
  - 1.2. Describe the roles and responsibilities of other professionals within the health care team or diving team
  - 1.3. Recognize and respect the diverse roles, responsibilities, and competencies of other professionals in relation to their own
  - 1.4. Work with others to assess, plan, provide, and integrate care for individuals and groups of patients
    - 1.4.1. Liaise with patients, families, social workers and other professionals to facilitate access to HBOT

- 1.5. Work collaboratively in other activities and tasks; examples are research, educational work, program review, and/or administrative responsibilities
  - 1.6. Participate in interprofessional team meetings
  - 1.7. Enter into interdependent relationships with other professions for the provision of quality care
  - 1.8. Describe the principles of team dynamics
  - 1.9. Respect team ethics, including confidentiality, resource allocation, and professionalism
  - 1.10. Demonstrate leadership in a health care team, as appropriate
- 2. Work effectively with other health professionals or diving professionals and authorities to prevent, negotiate, and resolve interprofessional conflict**
- 2.1. Demonstrate a respectful attitude towards other colleagues and members of an interprofessional team
  - 2.2. Work with other professionals to prevent conflicts
  - 2.3. Respect differences and the scopes of practice of other professions
  - 2.4. Reflect on their own differences, misunderstandings, and limitations that may contribute to interprofessional tension
  - 2.5. Reflect on interprofessional team function
  - 2.6. Employ collaborative negotiation to resolve conflicts and address misunderstandings

## **Manager**

### ***Definition:***

As *Managers*, Hyperbaric Medicine diplomates are integral participants in health care organizations or occupational diving operations, organizing sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the health care system or diving operation

### ***Key and Enabling Competencies: Hyperbaric Medicine diplomates are able to...***

- 1. Participate in activities that contribute to the effectiveness of their health care organizations and systems, or diving operations**
  - 1.1. Work collaboratively with others in their organizations
  - 1.2. Participate in systemic quality process evaluation and improvement, such as patient safety initiatives
    - 1.2.1. Demonstrate adherence to standardized protocols and operating procedures
    - 1.2.2. Analyze safety events to improve quality of care

- 1.2.3. Develop standard operating procedures
  - 1.3. Describe the structure and function of the health care system as it relates to Hyperbaric Medicine, including the roles of physicians
    - 1.3.1. Accreditation programs for medical hyperbaric treatment facilities
    - 1.3.2. Organization of medical hyperbaric treatment facilities
    - 1.3.3. Standards from the Canadian Standards Association (CSA) and those from applicable governmental or international organizations for hyperbaric facilities
    - 1.3.4. Standards of practice
  - 1.4. Describe principles of health care financing, including physician remuneration, budgeting, and organizational funding
- 2. Manage their practice and career effectively**
- 2.1. Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life
  - 2.2. Manage a practice, including finances and human resources
  - 2.3. Implement processes to ensure personal practice improvement
  - 2.4. Employ information technology appropriately for patient care
- 3. Allocate finite health care resources appropriately**
- 3.1. Demonstrate an understanding of the importance of just allocation of health care resources, balancing effectiveness, efficiency, and access with optimal patient care
  - 3.2. Apply evidence and management processes for cost-effective hyperbaric care
- 4. Serve in administration and leadership roles**
- 4.1. Participate effectively in committees and meetings
  - 4.2. Lead or implement change in health care
  - 4.3. Plan relevant elements of health care delivery, such as work schedules

## **Health Advocate**

### ***Definition:***

As *Health Advocates*, Hyperbaric Medicine diplomates responsibly use their expertise and influence to advance the health and well-being of individual patients, communities, and populations.

**Key and Enabling Competencies: Hyperbaric Medicine diplomates are able to...**

**1. Respond to individual patient health needs and issues as part of patient care**

- 1.1. Identify the health needs of an individual patient
- 1.2. Identify opportunities for advocacy, health promotion, and disease prevention with individuals to whom they provide care
  - 1.2.1. Facilitate access to alternate living or transport arrangements for patients undergoing long-term HBOT (*clinical hyperbaric medicine stream only*)

**2. Respond to the health needs of the communities that they serve**

- 2.1. Describe the practice communities that they serve
- 2.2. Identify opportunities for advocacy, health promotion, and disease prevention in the communities that they serve, and respond appropriately
- 2.3. Demonstrate an appreciation of the possibility of competing interests between the communities served and other populations

**3. Identify the determinants of health for the populations that they serve**

- 3.1. Identify the determinants of health of the population, including barriers to access to care and resources
- 3.2. Identify vulnerable or marginalized populations within those served and respond appropriately

**4. Promote the health of individual patients, communities, and populations by advocating for access to evidence based hyperbaric oxygen treatment**

- 4.1. Describe an approach to implementing a change in a determinant of health of the populations they serve
- 4.2. Describe how public policy impacts on the health of the populations served
- 4.3. Identify points of influence in the health care system and its structure
- 4.4. Describe the ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity, and idealism
- 4.5. Demonstrate an appreciation of the possibility of conflict inherent in their role as a health advocate for a patient or community with that of manager or gatekeeper
- 4.6. Describe the role of the medical profession in advocating collectively for health and patient safety

## Scholar

### **Definition:**

As *Scholars*, Hyperbaric Medicine diplomates demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application and translation of medical knowledge.

**Key and Enabling Competencies: Hyperbaric Medicine diplomates are able to...**

### **1. Maintain and enhance professional activities through ongoing learning**

- 1.1. Describe the principles of maintenance of competence
- 1.2. Describe the principles and strategies for implementing a personal knowledge management system
- 1.3. Recognize and reflect on learning issues in practice
- 1.4. Conduct personal practice audits
- 1.5. Pose an appropriate learning question
- 1.6. Access and interpret the relevant evidence
- 1.7. Integrate new learning into practice
- 1.8. Evaluate the impact of any change in practice
- 1.9. Document the learning process

### **2. Critically evaluate medical information and its sources, and apply this appropriately to practice decisions**

- 2.1. Describe the principles of critical appraisal
- 2.2. Critically appraise retrieved evidence in order to address a clinical question
- 2.3. Integrate critical appraisal conclusions into clinical care

### **3. Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others**

- 3.1. Describe principles of learning relevant to medical education
- 3.2. Identify collaboratively the learning needs and desired learning outcomes of others
  - 3.2.1. Assess the learning needs of other health professionals, diving professionals and/or the public related to Hyperbaric Medicine
- 3.3. Select effective teaching strategies and content to facilitate others' learning
- 3.4. Deliver effective lectures or presentations
- 3.5. Assess and reflect on a teaching encounter
- 3.6. Provide effective feedback

3.7. Describe the principles of ethics with respect to teaching

**4. Contribute to the development, dissemination, and translation of new knowledge and practices**

4.1. Describe the principles of research and scholarly inquiry

4.2. Describe the principles of research ethics

4.3. Pose a scholarly question

4.4. Conduct a systematic search for evidence

4.5. Select and apply appropriate methods to address the question

4.6. Disseminate the findings of a study

4.7. Complete a scholarly project relevant to Hyperbaric Medicine

**Professional**

***Definition:***

As *Professionals*, Hyperbaric Medicine diplomates are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behaviour.

***Key and Enabling Competencies: Hyperbaric Medicine diplomates are able to...***

**1. Demonstrate a commitment to their patients, profession, and society through ethical practice**

1.1. Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect, and altruism

1.2. Demonstrate a commitment to delivering the highest quality care and maintenance of competence

1.2.1. Adhere to practice guidelines and standards of care

1.3. Recognize and appropriately respond to ethical issues encountered in practice

1.4. Identify, declare, and manage perceived, potential, and actual conflicts of interest

1.5. Recognize the principles and limits of patient privacy and confidentiality as defined by the law and professional practice standards

1.6. Maintain appropriate boundaries with patients

**2. Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation**

2.1. Demonstrate knowledge and an understanding of professional, legal, and ethical codes of practice

- 2.2. Fulfil the regulatory and legal, as well as applicable contractual or other, obligations required of current practice in the jurisdiction
- 2.3. Demonstrate accountability to professional regulatory bodies
- 2.4. Recognize and respond to others' unprofessional behaviours in practice
- 2.5. Participate in peer review

**3. Demonstrate a commitment to physician health and sustainable practice**

- 3.1. Balance personal and professional priorities to ensure personal health and a sustainable practice
- 3.2. Strive to heighten personal and professional awareness and insight
- 3.3. Recognize other professionals in need and respond appropriately

**COMPETENCIES RELEVANT TO DIVING MEDICINE**

In addition, the diplomate with a focus on diving medicine will have acquired the following competencies:

**Medical Expert**

**1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centred medical care**

- 1.1. Perform a consultation effectively, including the presentation of well-documented assessments and recommendations in oral, written, and/or electronic form, in response to a request from another health care professional
  - 1.1.1. Perform an assessment of fitness for diving according to the requirements of the applicable jurisdiction, in response to a request from a diver, employer or regulatory authority

**2. Establish and maintain clinical knowledge, skills, and behaviours appropriate to Hyperbaric Medicine**

- 2.1. Apply knowledge of the clinical, socio-behavioural, and fundamental biomedical sciences relevant to Hyperbaric Medicine
  - 2.1.1. Diving gas systems and breathing gas purity
    - 2.1.1.1. Breathing systems
  - 2.1.2. Thermal control and hazards in diving environments
  - 2.1.3. Diving standards: CSA and standards required by other applicable governmental or international organizations
  - 2.1.4. Principles of occupational health
    - 2.1.4.1. Regulations and certification standards relevant to diving

- 2.1.5. Diving, dive tables and decompression
- 2.1.6. Underwater dive systems and equipment
- 2.1.7. Underwater hazards
- 2.1.8. Diving in contaminated environments
- 2.1.9. Environmental extremes
- 2.1.10. Decompression diving, including saturation diving
- 2.1.11. Military and police diving
- 2.1.12. Long-term adverse health effects of diving, including but not limited to
  - 2.1.12.1. Neurologic
  - 2.1.12.2. Pulmonary
  - 2.1.12.3. Dysbaric osteonecrosis

### **3. Perform a complete and appropriate assessment of a patient**

- 3.4. Select medically appropriate investigative methods in a resource-effective and ethical manner
  - 3.4.1. Undertake investigations required by the applicable diving standards or jurisdiction
- 3.5. Demonstrate effective clinical problem solving and judgment to address the patient's problems, including interpreting available data and integrating information to generate differential diagnoses and management plans
  - 3.5.1. Apply the relevant medical certification standards in determining an individual's fitness to work in a hyperbaric environment

## **Communicator**

### **1. Develop rapport, trust, and ethical therapeutic relationships with patients and families**

- 1.1. Respect patient privacy, confidentiality, and autonomy
  - 1.1.1. Respect patient confidentiality, privacy and autonomy when interacting with diving team and operators

### **3. Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals**

- 3.1. Communicate effectively to patients that their condition(s) affects their ability to work in the hyperbaric environment, including consideration of sudden or subtle incapacitation while undergoing critical safety functions

## Manager

### 1. Participate in activities that contribute to the effectiveness of their health care organizations and systems, or diving operations

- 1.2. Participate in systemic quality process evaluation and improvement, including patient safety initiatives
  - 1.2.1. Participate in the investigation of diving fatalities
- 1.4. Describe the structure and function of the health care system as it relates to Hyperbaric Medicine, including the roles of physicians
  - 1.4.1. Demonstrate knowledge of the jurisdictions and systems regulating diving and diving safety

## Health Advocate

### 3. Identify the determinants of health for the populations that they serve

- 3.1. Identify the determinants of health of the population, including barriers to access to care and resources
  - 3.1.1. Distance of diving operations from Hyperbaric Medicine expertise
  - 3.1.2. Emotional issues associated with health system encounters that may threaten income, status or personal choice

## REQUIRED TRAINING EXPERIENCES: CLINICAL HYPERBARIC MEDICINE STREAM

- 1. Complete at least one comprehensive foundational course in Hyperbaric Medicine providing at least 80 hours of training in total of which at least 40 hours must be synchronous participation or in-person learning. Acceptable courses are those approved by or meeting the requirements of one of the following organizations:
  - 1.1. Canadian Undersea and Hyperbaric Medical Association (CUHMA)
  - 1.2. Canadian Armed Forces
  - 1.3. Undersea and Hyperbaric Medical Society (UHMS)
  - 1.4. Equivalent as approved by program director and by the Royal College Hyperbaric Medicine AFC Committee
- 2. Complete a Basic Life Support (BLS) course
- 3. Complete an Advanced Cardiac Life support (ACLS) course
- 4. Complete an Advanced Trauma Life Support (ATLS) course

5. Perform clinical assessments of individual fitness for appropriateness for hyperbaric oxygen treatment. This must include reassessment of fitness after significant illness or medical intervention
6. Supervise treatment in a medical hyperbaric treatment facility including experience treating patients in both monoplace and multiplace chambers
  - 6.1. This must include experience with both elective and emergency indications for HBOT; a minimum of 240 elective patient treatments is recommended
  - 6.2. This must include experience in the management of vascular lines and monitors in hyperbaric chambers
7. Participate in airway management during an anesthesiology operating room experience
8. Interpret vascular assessments which may include transcutaneous oxygen measurements (TCOM) and laser Doppler
9. Provide on call medical coverage for a medical hyperbaric treatment facility that maintains continuous emergency service availability; a minimum of 480 hours of coverage is recommended

#### **RECOMMENDED TRAINING EXPERIENCES: CLINICAL HYPERBARIC MEDICINE STREAM**

1. Participate in clinical assessments of the ear and sinus, as well as foreign body removal and/or myringotomy procedures, in a otolaryngology clinic
2. Complete formal courses in wound care
3. Participate in a wound care clinic
4. Experience the hyperbaric environment
5. Complete an experience at a medical hyperbaric treatment facility other than the primary training site

#### **REQUIRED TRAINING EXPERIENCES: DIVING MEDICINE STREAM**

1. Complete at least one comprehensive foundational course in Hyperbaric Medicine providing at least 80 hours of training in total of which at least 40 hours must be synchronous participation or in-person learning. Acceptable course are those approved by or meeting the requirements of one of the following organizations:
  - 1.1. Canadian Undersea and Hyperbaric Medical Association (CUHMA)
  - 1.2. Canadian Armed Forces Diving Medicine Advanced (DMA)
  - 1.3. Canadian Standards Association Level 2 Diving Physician
  - 1.4. UHMS

*COMPETENCY TRAINING REQUIREMENTS IN HYPERBARIC MEDICINE (2016)*

- 1.5. Equivalent as approved by program director and by the Royal College Hyperbaric Medicine AFC Committee
  2. Complete Basic Life Support (BLS) course
  3. Complete Advanced Cardiac Life support (ACLS) course
  4. Complete Advanced Trauma Life Support course
  5. Complete Fitness to Dive course provided, recognized, or complying with the requirements of one or more of the following organizations:
    - 5.1. UHMS
    - 5.2. CUHMA
    - 5.3. Canadian Forces Diving Medicine Basic (DMB)
    - 5.4. Diving Medicine Advisory Committee (DMAC)
    - 5.5. International Marine Contractors Association (IMCA)
    - 5.6. Canadian Standards Association (CSA)
    - 5.7. National Oceanic and Atmospheric Administration (NOAA)
    - 5.8. United States Navy
    - 5.9. United Kingdom Health and Safety Executive (HSE)
    - 5.10. Natural Resources Canada
    - 5.11. Provincial Workers Compensation Commission or Provincial Occupational Health authorities
  6. Perform clinical assessments of individual fitness for occupational hyperbaric environments. This must include reassessment of fitness after decompression sickness, other diving related medical conditions or after significant illness or medical intervention
  7. Supervise treatment in a medical hyperbaric treatment facility including experience treating patients in both monoplace and multiplace chambers
    - 7.1. This must include experience with both elective and emergency indications for HBOT; a minimum of 40 patient treatments is recommended, at least 5 of which should be divers
    - 7.2. This must include experience in the management of vascular lines and monitors in hyperbaric chambers
  8. Participate in airway management during an anesthesiology operating room experience
  9. Observe diving operations at an occupational dive site
  10. Provide on call medical coverage for a medical hyperbaric treatment facility that maintains continuous emergency service availability; a minimum of 480 hours of
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coverage is recommended

11. Provide on call medical coverage for at least three (3) different occupational diving operations, that maintain continuous emergency service availability; a minimum of 720 hours of coverage is recommended
12. Complete a course or training that includes the principles, physiology, physics, technology, safety, and medical aspects of saturation diving, including deep offshore oxy-helium saturation diving

### **RECOMMENDED TRAINING EXPERIENCES: DIVING MEDICINE STREAM**

1. Participate in clinical assessments of the ear and sinus, as well as foreign body removal and/or myringotomy procedures, in a otolaryngology clinic
2. Experience the hyperbaric environment
3. Provide medical oversight of decompression diving
4. Complete an experience at a medical hyperbaric treatment facility other than the primary training site

### **OPTIONAL TRAINING EXPERIENCES: DIVING MEDICINE STREAM**

1. Provide medical oversight of diving operations, including development of standards or policies, and assessment of occupational and / or military divers
2. Provide medical support to offshore saturation diving
3. Perform medical assessments of saturation divers
4. Observe a dive support vessel for saturation diving

**APPROVED** – Specialty Standards Review Committee – October 2016

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