

2012

**EDITORIAL REVISION AUGUST 2018
VERSION 1.5**

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.

DEFINITION

Transfusion Medicine is that domain of laboratory and clinical medicine concerned with all aspects of the collection, testing, preparation, storage, transportation, pre-transfusion testing, post-transfusion follow-up, indications for, infusion, and safety of human blood components and products, nonhuman alternatives, and alternative products manufactured by recombinant DNA technology. These activities are undertaken in such a way that the rights of blood donors, patients, and families are respected, and scarce resources are appropriately allocated.

ELIGIBILITY REQUIREMENTS

The Area of Focused Competence (AFC) trainee must have Royal College certification, or equivalent, in Internal Medicine, Hematology, Pediatrics, Hematological Pathology, Anesthesiology, or General Pathology, or enrolment in a Royal College accredited residency program in these areas (see requirements for these qualifications). All AFC trainees must be certified in their primary specialty in order to be eligible to submit a Royal College competency portfolio in Transfusion Medicine.

GOALS

Upon completion of training, an AFC diplomate is expected to function as a competent specialist in Transfusion Medicine, capable of an enhanced practice in this area of focused competence, within the scope of Internal Medicine, Hematology, Pediatrics, Hematological Pathology, Anesthesiology, or General Pathology. The AFC trainee must acquire a working knowledge of the theoretical basis of the discipline, including its foundations in science and research, as it applies to medical practice.

The discipline of Transfusion Medicine includes responsibility for

- the diagnostic and therapeutic aspects of immunohematology, apheresis, histocompatibility, and related molecular biology and biotechnology;
- management of the medical laboratory and blood centre, including quality, safety and regulatory aspects;
- ensuring the appropriate use of blood;

- ensuring the adequacy of supply for the blood system;
- supervising the provision of a safe and effective blood supply;
- supervising the banking and provision of cell therapy products and human tissues for transplantation purposes;
- engaging policy-makers, other physicians, and other health professionals in transfusion medicine; and
- the advancement of the discipline through basic scientific and clinically applied research.

The Transfusion Medicine diplomate will respect the rights of the individual and family and 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. The Transfusion Medicine physician engages with policy-makers, other physicians, and other health professionals in the practice of transfusion medicine.

At the completion of training, the diplomate will have acquired the following competencies and will function effectively as a:

Medical Expert

Definition:

As *Medical Experts*, Transfusion 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: Transfusion 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 effective use of all CanMEDS competencies relevant to transfusion medicine practice
- 1.3. Identify and appropriately respond to relevant ethical issues arising in patient care, research, policy, and laboratory functions within transfusion medicine
- 1.4. Demonstrate ability to effectively and appropriately 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 policy-makers, as needed

2. Establish and maintain clinical knowledge, skills, and behaviours appropriate to transfusion medicine

- 2.1. Apply knowledge of the clinical, socio-behavioural, and fundamental biomedical sciences relevant to effectively and ethically provide medical supervision to operate blood donor centres and/or blood transfusion laboratories
 - 2.1.1. Disaster planning and emergency preparedness as these relate to blood transfusion and provision of blood and blood products in emergency situations
 - 2.1.2. Blood donors - selection, donation and testing, including:
 - 2.1.2.1. Describe the process of allogeneic blood donation, including the medical history, donation process, adverse effects, and donor testing
 - 2.1.2.2. Identify appropriate laboratory screening investigations for blood donors, including interpreting virology and microbiology test results
 - 2.1.2.3. Identify relevant scientific information to advise on introduction and implementation of new screening options for blood donors and donations
 - 2.1.3. Processing, manufacturing and distribution of blood products
 - 2.1.3.1. Demonstrate an understanding of good manufacturing practice (GMP) with respect to processing blood donations and the manufacture and distribution of blood products
 - 2.1.3.2. Describe the manufacturing process for plasma derivatives, recombinant products and alternatives
 - 2.1.4. Routine blood banking laboratory services
 - 2.1.4.1. Demonstrate expertise in red blood cell (RBC) and platelet immunohematologic investigations
 - 2.1.4.2. Describe the principles of typing for human leukocyte antigen (HLA) and testing for anti-HLA antibodies
 - 2.1.5. Specialty immunohematologic laboratory services
 - 2.1.5.1. Select appropriate investigative tools to resolve serological problems encountered during compatibility testing, including molecular and genetic testing
 - 2.1.5.2. Advise on the introduction of new diagnostic options in the immunohematologic laboratory
 - 2.1.6. Transplantation of bone marrow, peripheral blood and cord blood stem cells, and solid organs
 - 2.1.6.1. Identify the transfusion requirements to support the various types of transplantation programs
 - 2.1.6.2. Describe the role of the HLA system as it pertains to transplantation, the methods to select potential donors and recipients, and the role and

function of various stem cell donor registries especially in the Canadian context

- 2.1.6.3. Demonstrate an understanding of the policies and procedures regarding the collection and storage of hematopoietic stem cells from various sources
- 2.1.6.4. Demonstrate an understanding of relevant issues regarding solid organ procurement and transplantation
- 2.1.7. Adverse effects, including but not limited to serological, viral, and clinical, with respect to the adverse effects of blood component therapy, including immune and non-immune effects, as well as immediate and delayed complications
 - 2.1.7.1. Describe the risks of transfusion associated with serological incompatibilities; viral, bacterial and prion mediated disease; leukocytes in the transfused blood components; metabolic abnormalities; volume of transfused products; and unique complications related to underlying disease
 - 2.1.7.2. Discuss these risks and associated benefits or alternatives with physicians or others, and advise on treatment and follow-up
 - 2.1.7.3. Prevent and track potential adverse effects through comprehensive screening, surveillance, lookback and traceback programs
- 2.1.8. Blood conservation and alternatives to transfusion
 - 2.1.8.1. Discuss alternatives to allogeneic blood transfusion therapy including autologous blood donation settings, hemoglobin substitutes, pharmacological agents, growth factors and volume expanders
 - 2.1.8.2. Describe the surgical techniques and medical therapies which may impact on the need for transfusion therapy
 - 2.1.8.3. Describe the concepts of bloodless surgery and medicine
- 2.1.9. Special blood requirements, including rare blood groups
 - 2.1.9.1. Describe the indications for frozen red cell storage and methods for freezing and thawing
 - 2.1.9.2. Describe timelines and logistic implications in obtaining frozen red cell units
 - 2.1.9.3. Describe platelet antigens and considerations in obtaining antigen-negative platelet units
 - 2.1.9.4. Describe indications for modified blood components and products, and possible alternatives to these
 - 2.1.9.5. Describe how the rare donor database can be accessed

2.1.10. Tissue banking

2.1.10.1. Describe screening procedures for both living and deceased donors

2.1.10.2. Describe the principles of the quality control processes regarding harvesting, processing, storage, issuing, and record keeping of these tissues

2.2. Describe the CanMEDS framework of competencies relevant to Transfusion 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. Contribute to the enhancement of quality care and patient safety in their practice, integrating the available best evidence and best practices

3. Perform a complete and appropriate assessment of a transfusion medicine patient and of a blood or hematopoietic stem cell donor

3.1. Identify and explore issues to be addressed in a patient encounter effectively, including the patient's context and preferences

3.2. Elicit a history that is relevant, concise and accurate to context and preferences and meets national and international standards for donor screening for the purposes of prevention and health promotion, diagnosis and management

3.3. Perform a focused physical examination relevant to transfusion medicine

3.4. Select medically appropriate investigations 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. Prescribe the relevant and appropriate laboratory tests necessary to support requests or to give advice on appropriate blood component or blood derivative therapy, and discuss alternative forms of therapy

4. Use preventive and therapeutic interventions relevant to Transfusion Medicine effectively

4.1. Implement an effective management plan in collaboration with a patient, the patient's family, and the care team, as well as the health care institution and the blood provider where appropriate

4.2. Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions relevant to transfusion medicine practice

4.2.1. Identify the unique problems and requirements for transfusion therapy and alternative therapies in the setting of neonatology, pediatrics, pregnancy, obstetrical emergencies, trauma, massive transfusion, cardiac surgery, oncology and hematology

4.2.2. Identify the unique problems and requirements of patients with acquired or inherited coagulation and bleeding disorders

- 4.3. Obtain appropriate informed consent for therapies
 - 4.3.1. Describe management of patients with religious or other objections to transfusion
 - 4.3.2. Demonstrate the role of informed consent within transfusion medicine
 - 4.3.3. Appropriately apply the legal and ethical concepts of informed consent
 - 4.3.4. Provide patients with appropriate information to allow them to decide to provide or withhold informed consent

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

- 5.1. Describe effective, appropriate, and timely performance of diagnostic procedures relevant to transfusion medicine practice
 - 5.1.1. Provide medical oversight of a blood donation in a safe and appropriate fashion
 - 5.1.2. Provide medical oversight of technical skills relevant to blood group serology and/or other laboratory investigations
 - 5.1.3. Correctly perform techniques used in transfusion medicine laboratories
 - 5.1.3.1. ABO, Rh typing, direct and indirect antiglobulin testing
 - 5.1.3.2. Antibody identification techniques
 - 5.1.3.3. Phenotyping and genotyping for other red cell antigens
 - 5.1.3.4. Red cell compatibility testing
 - 5.1.4. Write or update a standard operating procedure, technical or nursing, relevant to blood transfusion
- 5.2. Demonstrate effective, appropriate, and timely performance of therapeutic procedures relevant to transfusion medicine practice
 - 5.2.1. Administration of blood and blood products
 - 5.2.2. Provide consultative advice regarding appropriate and cost-effective use of blood components, blood products, or alternatives to blood

- 5.2.3. Provide medical oversight for therapeutic and donor apheresis
 - 5.2.4. Identify the appropriate indications and donor selection criteria and explain the technical skills involved in each of the procedures, including adverse effects for:
 - 5.2.4.1. Apheresis
 - 5.2.4.2. Directed donations and autologous blood donations, including intra-operative and post-operative blood salvage, and pre-operative and peri-operative donation
 - 5.3. Obtain appropriate informed consent for procedures
 - 5.4. Document and disseminate information related to procedures performed and their outcomes
 - 5.4.1. Analyse and explain the risks and benefits associated with each of the procedures
 - 5.5. Ensure adequate follow-up 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
 - 6.3. Arrange appropriate follow-up care services for patients and their families

Communicator

Definition:

As *Communicators*, Transfusion 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: Transfusion Medicine diplomates are able to...

- 1. Develop rapport, trust, and ethical therapeutic relationships with patients and families with respect to transfusion needs and options**
 - 1.1. Recognize that being a good communicator is a core clinical skill for Transfusion Medicine physicians, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction, adherence and improved clinical outcomes
 - 1.2. Establish positive 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 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, but also about a patient's beliefs, concerns, expectations and illness experience
 - 2.1.1. Respect various religious and other objections to transfusion
- 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, encourages discussion and participation in decision-making
 - 3.1.1. Discuss appropriate information with donors, patients, family members and other health care partners and include the following topics concerning transfusion:
 - 3.1.1.1. Benefits and risks
 - 3.1.1.2. Directed donations
 - 3.1.1.3. Autologous donations
 - 3.1.1.4. Alternatives
- 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 explore problems to be addressed from a patient encounter effectively, including the patient's context, responses, concerns, and preferences
 - 4.2. Respect diversity and difference, 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, such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstanding

5. Convey effective oral, written, and/or electronic information about a medical encounter

- 5.1. Maintain clear, concise, accurate, and appropriate records of clinical encounters and plans
- 5.2. Present oral reports of clinical encounters and plans

6. Present appropriate medical information effectively to the public or media about transfusion medical issues, including the safety and sufficiency of the blood supply and the need for blood donors

Collaborator

Definition:

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

Key and Enabling Competencies: Transfusion Medicine diplomates are able to...

1. Participate effectively and appropriately in an interprofessional health care team

- 1.1. Describe their roles and responsibilities to other professionals
- 1.2. Describe the roles and responsibilities of other professionals within the health care team
- 1.3. Recognize and respect the diversity of roles, responsibilities and competences 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)
- 1.5. Work collaboratively in other activities and tasks; examples are research, educational work, program review, and/or administrative responsibilities
- 1.6. Participate effectively in an interprofessional transfusion medicine committee
 - 1.6.1. Develop indicators for monitoring transfusion practice that can be implemented and monitored
 - 1.6.2. Describe the key functions of the transfusion committee and how they are developed and implemented
- 1.7. Enter into interdependent relationships with other professions for the provision of quality care with respect to transfusion medicine
- 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

2. Work effectively with other health professionals 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 professionals
- 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*, Transfusion Medicine diplomates are integral participants in health care organizations, organizing sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the health care system.

Key and Enabling Competencies: Transfusion Medicine diplomates are able to...

1. Participate in activities that contribute to the effectiveness of their health care organizations and systems

- 1.1. Work collaboratively with others in their organizations
 - 1.1.1. Describe the role of Transfusion Medicine physician participation in relevant organization committees such as the transfusion committee, quality committee, resource allocation committee, and provincial and federal committees such as provincial blood offices, Health Canada blood safety committees, and blood centre liaison committees
- 1.2. Employ information technology appropriately for patient care
- 1.3. Advise the organization on health human resources requirements for transfusion medicine
- 1.4. Utilize information technology effectively and understand provincial-based utilization and tracking databases
 - 1.4.1. Demonstrate an understanding of the information systems in both the hospital and blood centre that support clinical, research, and administrative functions
 - 1.4.2. Describe the blood supply donor database system
- 1.5. Participate in systemic quality process evaluation and improvement, such as patient safety initiatives

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- 1.5.1. Perform quality assurance reviews to evaluate utilization of blood components and products
- 1.5.2. Lookback/traceback
 - 1.5.2.1. Clearly differentiate between lookback and traceback and explain the fundamental purpose of both processes
 - 1.5.2.2. Discuss the specific legal and ethical issues associated with lookback/traceback
 - 1.5.2.3. Define the roles played by the blood centre, hospital, physician and public health in lookback/traceback
- 1.5.3. Employ methods to regularly evaluate transfusion practices, including the use of criteria for evaluating ordering practices, utilization, administrative policies, ability to meet patients' needs, adverse reaction evaluation and evaluation of errors and incidents together with appropriate corrective action
- 1.5.4. Describe the principles of risk management as applicable to transfusion medicine
- 1.5.5. Apply the principles of standard operating procedures
- 1.5.6. Evaluate a laboratory's compliance with accreditation standards
- 1.5.7. Develop a strategy to ensure a laboratory is compliant with accreditation standards and regulations
- 1.6. Describe the structure and function of the health care system as it relates to transfusion medicine, including the roles of physicians
- 1.7. Describe principles of health care financing, including budgeting, physician remuneration, 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. Implement processes to ensure personal practice improvement

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-appropriate care
 - 3.2.1. Research donor suitability for the various donor situations (allogeneic, autologous or directed)
 - 3.2.2. Review abnormal laboratory data
 - 3.2.3. Sign out transfusion reactions, infection problems or unusual findings
 - 3.2.4. Participate in other activities (apheresis, autologous or directed donations)

- 3.2.5. Manage blood inventory and utilization, including during blood shortages
- 3.2.6. Demonstrate knowledge of regional, provincial and national blood suppliers
 - 3.2.6.1. Describe the hospital/blood centre organization
 - 3.2.6.2. Describe laboratory functions in the hospital and blood centres as well as the collection functions associated with transfusion medicine

4. Serve in administration and leadership roles, as appropriate

- 4.1. Participate effectively in hospital and regional transfusion committees and related meetings
- 4.2. Lead or implement change in transfusion medicine practice

Health Advocate

Definition:

As *Health Advocates*, Transfusion 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: Transfusion 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 as it relates to blood services
- 1.2. Identify opportunities for advocacy, health promotion and disease prevention with individuals to whom they provide care

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
 - 2.2.1. Blood conservation
 - 2.2.2. Transfusion practice
 - 2.2.3. Adequacy of the blood supply
- 2.3. Appreciate the possibility of competing interests between the communities served and other populations

3. Identify the determinants of health related to blood services for the populations that they serve

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

4. Promote the health of individual patients, communities, and populations

- 4.1. Describe an approach to implementing a change in a determinant of health of the populations they serve, while taking into consideration the following:
 - 4.1.1. Safety of the blood supply, including patients and donors
 - 4.1.2. Safety in the workplace
 - 4.1.3. Effects of the change in minimizing recipient risk and enhancing sufficiency of the blood supply and the resource and clinical implications of the change
 - 4.1.4. Alternatives to blood transfusion
- 4.2. Describe how public policy impacts on the transfusion health of the populations served, at both the hospital and blood centre levels
- 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 health advocates for a patient or community with that of manager or gatekeeper, both at the hospital and the blood centre levels
- 4.6. Describe the role of the medical profession in advocating collectively for health and patient safety

Scholar

Definition:

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

Key and Enabling Competencies: Transfusion Medicine diplomates are able to...

1. Evaluate information relevant to transfusion medicine and apply this appropriately to practice decisions

- 1.1. Critically appraise retrieved evidence in order to address a clinical question
- 1.2. Integrate critical appraisal conclusions into clinical care
- 1.3. Critically review published literature and apply appropriate utilization principles/practices/guidelines

- 2. Educate patients, families, students, residents, other health professionals, the public and others about aspects of transfusion medicine, as appropriate**
 - 2.1. Describe principles of learning relevant to medical education
 - 2.2. Identify collaboratively the learning needs and desired learning outcomes of others
 - 2.3. Select effective teaching strategies and content to facilitate others' learning
 - 2.4. Demonstrate an effective lecture or presentation
 - 2.5. Assess and reflect on a teaching encounter
 - 2.6. Provide effective feedback
 - 2.7. Describe the principles of ethics with respect to teaching

- 3. Contribute to the development, dissemination, and translation of new transfusion medicine knowledge and practices**
 - 3.1. Pose a scholarly question relevant to Transfusion Medicine
 - 3.2. Conduct a systematic search for evidence
 - 3.3. Select and apply appropriate methods to address the question
 - 3.4. Disseminate the findings of a study appropriately

Professional

Definition:

As *Professionals*, Transfusion 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: Transfusion 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
 - 1.3. Recognize and appropriately respond to ethical issues encountered in practice
 - 1.3.1. Error reporting
 - 1.3.1.1. Describe national, provincial and institutional policies and the mechanisms to track, investigate and resolve errors, and develop trend analysis to evaluate corrective action

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- 1.3.1.2. Describe the regulatory and public health requirements, including the principle of continuous quality improvement pertinent to error reporting
- 1.4. Manage conflicts of interest appropriately
- 1.5. Recognize the principles and limits of patient confidentiality as defined by professional practice standards and the law
- 1.6. Maintain appropriate relations with patients
- 2. Demonstrate a commitment to their patients, profession and society through participation in profession-led regulation**
 - 2.1. Demonstrate knowledge and understanding of professional, legal, and ethical codes of practice
 - 2.2. Fulfil the regulatory and legal obligations required of current practice
 - 2.2.1. Explain the principles, processes and benefits of International Standards Organization (ISO) certification, as they apply to transfusion medicine
 - 2.2.2. Liability issues
 - 2.2.2.1. Recognize principles of liability in tort as it applies to negligence
 - 2.2.2.2. Adopt practice guidelines that minimize the possibility of negligence
 - 2.2.2.3. Differentiate between express and implied warranties as they apply to manufacturing and supplying goods and services
 - 2.2.2.4. Recognize blood shield laws and their potential effect on, and relevance for, Canadian practice
 - 2.3. Demonstrate accountability to professional regulatory bodies
 - 2.3.1. Demonstrate knowledge of regulatory issues related to transfusion medicine
 - 2.3.1.1. Health Canada/Food and Drug Administration (FDA)
 - 2.3.1.1.1. Explain the regulatory process for transfusion services at the national, provincial and local levels
 - 2.3.1.1.2. Describe the role of Health Canada in transfusion medicine
 - 2.3.1.1.3. Demonstrate an understanding of all processes necessary to ensure facility compliance with Health Canada regulations
 - 2.3.1.1.4. Describe the effects of FDA regulation on transfusion medicine in Canada
 - 2.3.2. Describe the practice standards for transfusion medicine as outlined by Health Canada, the Canadian Standards Association (CSA), and the Canadian Society for Transfusion Medicine
 - 2.4. Recognize and respond to others' unprofessional behaviours in practice
 - 2.4.1. Establish policies and procedures that ensure compliance with these standards

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

REQUIRED TRAINING EXPERIENCES

- 1. Experience at a blood centre, including a national blood centre, which must include exposure to:
 - 1.1. Blood donor services
 - 1.1.1. Selection, donation management (testing, including virology)
 - 1.1.2. Processing, manufacturing and distribution of blood components and products; inventory control
 - 1.1.3. Specialty immunohematological services
 - 1.1.4. Adverse effects of donation
 - 1.2. Autologous/directed donations
 - 1.3. Donor apheresis
 - 1.4. Hematopoietic stem cell donor recruitment and selection
 - 1.5. Adverse effects of transfusion (lookback/traceback; risk management; error reporting; liability issues)
 - 1.6. Safety in the workplace
 - 1.7. Regulatory standards and agencies
 - 1.8. Critical appraisal skills (develop educational strategies; work on interdisciplinary group; information management)
- 2. Experience in a hospital transfusion medicine service, which must include exposure to:
 - 2.1. Serological testing and interpretation (specialty serological services; serological transfusion problems)
 - 2.2. Patient blood management, including utilization of blood products; alternatives to blood; blood conservation; bedside transfusion practices and transfusion in special clinical settings

- 2.3. Transplantation medicine
 - 2.3.1. Hematopoietic stem cells collection, processing and transplantation
 - 2.3.2. HLA typing
 - 2.3.3. Solid organ transplantation
- 2.4. Patient apheresis (therapeutic), including exposure to both adult and pediatric issues
- 2.5. Informed consent as it pertains to transfusion medicine-related activities
- 2.6. Adverse effects of transfusion
- 2.7. Clinical transfusion problems
- 2.8. Lookback/traceback
- 2.9. Risk management and liability issues
- 2.10. Standards, regulatory agencies, accreditation and ISO
- 2.11. Educational program
 - 2.11.1. Benefits/risks of transfusion
 - 2.11.2. Consult/collaborate with physician groups
 - 2.11.3. Work in interdisciplinary and interprofessional teams
 - 2.11.4. Participate in hospital transfusion medicine committee and, where available, regional health area, or provincial blood coordinating program
- 2.12. Tissue banking
- 3. Research experience in which the candidate must satisfactorily contribute to a defined project (as indicated by the diploma director)
- 4. Experience in complementary areas such as transplantation, neonatal medicine, hemostasis and thrombosis, public health and infectious diseases

RECOMMENDED TRAINING EXPERIENCES

N/A

Provisionally approved – Office of Education – June 2012

Reviewed and approved – SSRC – June 2012

Editorial revisions – Office of Education – October 2012

Editorial revisions – AFC Committee; Office of Education – May 2013; July 2014

Revised – AFC Committee – September 2015

Editorial revisions – Office of Specialty Education – April 2016

Revised – AFC Committee – June 2017

Editorial revisions approved – Office of Specialty Education – August 2018