ACGME International

Advanced Specialty Program Requirements for Graduate Medical Education in Medical Toxicology (Emergency Medicine, Preventive Medicine)

Initial Approval:

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Int. Introduction

Background and Intent: Programs must achieve and maintain Foundational Accreditation according to the ACGME-I Foundational Requirements prior to receiving Advanced Specialty Accreditation. The Advanced Specialty Requirements noted below complement the ACGME-I Foundational Requirements. For each section, the Advanced Specialty Requirements should be considered together with the Foundational Requirements.

Int. I. Definition and Scope of the Specialty

Medical toxicology is a clinical specialty that includes the monitoring, prevention, evaluation, and treatment, in all age groups, of injury and illness due to occupational and environmental exposures, pharmaceutical agents, and unintentional and intentional poisoning. A medical toxicology fellowship provides fellows with experience in the clinical practice of medical toxicology and prepares physicians as practitioners, educators, researchers, and administrators capable of practicing medical toxicology in academic and clinical settings.

Int. II. Duration of Education

Int. II.A. The educational program in medical toxicology must be 24 or 36 months in length.

I. Institution

I.A. Sponsoring Institution

I.A.1. A fellowship in medical toxicology must function as an integral part of an ACGME-I-accredited residency in emergency medicine or preventive medicine.

I.B. Participating Sites

I.B.1. Any medical toxicology experience not available at the primary clinical site or Sponsoring Institution must be provided through an affiliation with a participating site.

I.B.2. Programs using multiple participating sites must ensure the provision of a unified educational experience for the fellows.

I.B.3. The primary clinical site must be a primary hospital or a poison center.

I.B.3.a) If the primary clinical site is a poison center, the program must identify a hospital where the clinical experience will take place.

I.B.4. Participating sites, including a poison center, should be in close physical proximity to the primary clinical site unless they provide special resources that are not available at the primary clinical site.

II. Program Personnel and Resources

II.A. Program Director

II.A.1. The program director must have at least three years of documented educational and/or administrative leadership in an emergency medicine, pediatrics, or preventive medicine residency or in a medical toxicology fellowship.

II.A.2. The program director must have current clinical activity in the practice of medical toxicology.

II.A.3. The program director must have academic involvement in scholarly activity in medical toxicology.

II.B. Faculty

II.B.1. There must be a minimum of two medical toxicology core physician faculty members based at the primary clinical site, including the program director.

II.B.2. Faculty members must supervise all fellows in their development of clinical, educational, research, advocacy, and administrative skills.

II.B.3. Consultants from appropriate medical specialties must be available for consultation and didactic sessions, to include special expertise in:

II.B.3.a) cardiovascular disease;

II.B.3.b) dermatology;

II.B.3.c) gastroenterology;

II.B.3.d) immunology;

II.B.3.e) nephrology;

II.B.3.f) ophthalmology;

II.B.3.g) pathology;

II.B.3.h) pulmonary disease; and,

II.B.3.i) surgical subspecialties.

II.C. Other Program Personnel

II.C.1. Consultants from appropriate non-medical specialties must be available for consultation and didactic sessions, to include:

II.C.1.a) biostatistics;

II.C.3.b) botany;

II.C.3.c) disaster and mass casualty incident management;

II.C.3.d) epidemiology;

II.C.3.e) environmental toxicology;

II.C.3.f) forensic toxicology;

II.C.3.g) hazardous materials;

II.C.3.h) herpetology;

II.C.3.i) industrial hygiene;

II.C.3.j) laboratory toxicology;

II.C.3.k) mycology;

II.C.3.l) occupational toxicology;

II.C.3.m) public health; and,

II.C.3.n) zoology.

II.D. Resources

II.D.1. There must be a poison control center or medical toxicology service that annually has at least 1,500 encounters from the community that require medial toxicologist consultation or intervention.

II.D.2. Resources must be available to support the provision of clinical experience in adult and pediatric critical care areas.

II.D.3. The following must be available at the primary clinical site or at an affiliated participating site:

II.D.3.b) adult and pediatric inpatient facilities;

II.D.3.c) adult and pediatric intensive care facilities;

II.D.3.d) adult and pediatric outpatient facilities;

II.D.3.e) emergency services for both adult and pediatric patients;

II.D.3.f) renal dialysis services with 24-hour availability; and,

II.D.3.g) toxicology laboratory services with 24-hour availability.

II.D.4. There should be an affiliation with a school of pharmacy or department of pharmacology.

II.D.4.b) In the absence of an affiliation with a school of pharmacy or department

of pharmacy, a Doctor of Pharmacy or PhD pharmacologist should be appointed to the teaching faculty.

II.D.5. There should be an affiliation with a school of public health, department of health, department of population health, department of community health, or similar institution to provide regular didactic experience and consultation to fellows.

III. Fellow Appointment

III.A. Eligibility Criteria

II.A.1. Prior to appointment in the program, fellows should have completed an ACGME-I-accredited residency program or a residency program acceptable to the Sponsoring Institution's Graduate Medical Education Committee.

II.B. Number of Fellows

See International Foundational Requirements, Section III.B.

III. Specialty-Specific Educational Program

III.A. ACGME-I Competencies

III.A.1. The program must integrate the following ACGME-I Competencies into the curriculum.

III.A.1.a) Professionalism

IV.A.1.a).(1) Fellows must demonstrate a commitment to professionalism and an adherence to ethical principles.

IV.A.1.b) Patient Care and Procedural Skills

IV.A.1.b).(1) Fellows must provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows must demonstrate competence in:

IV.A.1.b).(1).(a) gathering accurate, essential information in a timely manner;

IV.A.1.b).(1).(b) integrating information obtained from patient history, physical examination, physiologic recordings, and test results to arrive at an accurate assessment and treatment plan;

IV.A.1.b).(1).(c) integrating relevant biological, psychosocial, social, economic, ethnic, and familial factors into the evaluation and treatment of their patients;

IV.A.1.b).(1).(d) planning and implementing therapeutic treatment,

including pharmaceutical, medical device, behavioral, and surgical therapies;

IV.A.1.b).(1).(e) assessing toxicological exposures in occupational evaluations;

IV.A.1.b).(1).(f) serving as the primary or consulting physician responsible for providing direct/bedside patient evaluation, management, screening, and preventive services for toxicology patients;

IV.A.1.b).(1).(g) evaluating and managing patients with acute or chronic workplace occupational and environmental exposures, including responsibility for providing patient and worksite evaluation, management, exposure assessment and control, and preventive services;

IV.A.1.b).(1).(h) evaluating workplace risks and hazards;

IV.A.1.b).(1).(i) managing the entire course of critically poisoned patients broadly representative of society, either as the primary physician or as a consultant;

IV.A.1.b).(1).(j) serving as the primary or consulting physician responsible for providing direct/bedside patient evaluation, management, screening, and preventive services for acutely poisoned patients; and,

IV.A.1.b).(1).(k) consulting on calls from a referral population of poisoned patients under the supervision of a physician who is a medical toxicologist.

IV.A.1.b).(5) Fellows must be able to perform all medical, diagnostic, and surgical procedures considered essential for the area of practice, including demonstrating competence in interpreting the results of diagnostic tests.

IV.A.1.c) Medical Knowledge

IV.A.1.c).(1) Fellows must demonstrate knowledge of established and evolving biomedical clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Fellows must demonstrate knowledge of:

IV.A.1.c).(1).(a) major developments in the basic and clinical sciences relating to medical toxicology, through application of this knowledge in the care of their patients;

IV.A.1.c).(1).(b) indications, risks, and limitations for procedures, and management of patients through application of this

	knowledge in their care;
IV.A.1.c).(1).(c)	therapeutic approaches, including resuscitation, initial management, pharmacological basis of antidote use, supportive and other care, and withdrawal syndrome management;
IV.A.1.c).(1).(d)	the basic and clinical sciences relating to medical toxicology;
IV.A.1.c).(1).(e)	biochemistry of metabolic processes, the pharmacology, pharmacokinetics, teratogenesis, toxicity, and interactions of therapeutic drugs;
IV.A.1.c).(1).(f)	biochemistry of toxicants and toxins, kinetics, metabolism, mechanisms of acute and chronic injury, and carcinogenesis;
IV.A.1.c).(1).(g)	clinical manifestations and differential diagnosis of poisoning from drugs; industrial, household, environmental, and natural products; and agents of bioterrorism toxicants;
IV.A.1.c).(1).(h)	analytical and forensic toxicology, including assay methods and interpretation;
IV.A.1.c).(1).(i)	laboratory and other diagnostic assessments, as well as forensics, medicolegal issues, and occupational drug test interpretation;
IV.A.1.c).(1).(j)	assessment and population health, including criteria for causal inference, monitoring, occupational assessment and prevention, principles of epidemiology, and statistics;
IV.A.1.c).(1).(k)	experimental design and statistical analysis of data as related to laboratory, clinical, and epidemiologic research;
IV.A.1.c).(1).(l)	occupational toxicology, including acute and chronic workplace exposure to intoxicants and basic concepts of workplace and industrial hygiene;
IV.A.1.c).(1).(m)	prevention of poisoning, including prevention of occupational exposures by intervention methodologies that take into account the epidemiology, environmental factors, and the role of regulation and legislation in prevention;
IV.A.1.c).(1).(n)	environmental toxicology, including identification of hazardous materials and the basic principles of management of large-scale environmental contamination and mass exposures;

IV.A.1.c).(1).(o) function, management, and financing of poison centers;

IV.A.1.c).(1).(p) the role of regional poison centers in response to hazardous materials incidents, including terrorism, risk assessment, and communication;

IV.A.1.c).(1).(q) oral and written communication skills, including risk communication and teaching techniques;

IV.A.1.c).(1).(r) economics of health care and current health care management issues, including cost-effective patient care, quality improvement, resource allocation, and clinical outcomes;

IV.A.1.c).(1).(s) the role of national and international agencies in toxicology; and,

IV.A.1.c).(1).(t) administrative aspects of the practice of medical toxicology.

IV.A.1.d) Practice-Based Learning and Improvement

IV.A.1.d).(1) Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

IV.A.1.e) Interpersonal and Communication Skills

IV.A.1.e).(1) Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, patients' families, and health professionals.

IV.A.1.f) Systems-Based Practice

IV.A.1.f).(1) Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinates of health, as well as the ability to call effectively on other resources in the system to produce optimal care.

IV.B. Regularly Scheduled Educational Activities

IV.B.1. There must be at least four hours per week of planned didactic experiences focused on medical toxicology.

IV.B.1.a) All planned didactic experiences must be supervised by faculty members.

IV.B.2. Fellows must attend required seminars, conferences, and journal clubs.

IV.B.3. Fellows must actively participate in the planning and delivery of didactic sessions.

IV.B.4. The program must ensure that fellows assigned to participating sites will participate in required conferences and other didactic activities at the primary clinical site.

IV.B.4.a) The majority of didactic sessions should take place at the primary clinical site.

IV.B.5. Fellows must have instruction in the principles of hyperbaric medicine.

IV.B.6. Planned didactic experiences should include presentations based on the defined curriculum and should include morbidity and mortality conferences, journal review, administrative seminars, and conferences on research methods.

IV.B.6.a) All planned didactic experiences should have an evaluative component to measure fellow participation and educational effectiveness, including faculty-fellow interaction.

IV.C. Clinical Experiences

IV.C.1. Clinical experiences must be structured to allow fellows to function as a part of an effective interprofessional team that works together toward the shared goals of patient safety and quality improvement.

IV.C.2. Fellows must have a minimum of 12 months in a 24-month program and 18 months in a 36-month program of clinical experience as the primary or consulting physician responsible for providing direct/bedside patient evaluation, management, screening, and preventive services.

IV.C.3. Fellows must have experience with a referral population of poisoned patients under the supervision of a physician who is a medical toxicologist for the duration of the program.

IV.C.4. Fellows must have experience in a local or regional poison center or a regional referral toxicology service that annually takes at least 1,500 calls requiring physician telephone consultation or intervention.

IV.C.4.a) Each fellow must consult on an average of 240 patient encounters per year through referral calls involving poisoned patients.

IV.C.5. Fellows without prior experience in adult and pediatric critical care must have clinical experiences of at least one month in an adult intensive care unit and one month in a pediatric intensive care unit.

IV.C.6. Programs must provide fellows with a broad education, including in the basic skills and knowledge of medical toxicology, so that they may function as specialists competent in providing comprehensive patient care in medical toxicology, research, and teaching.

IV.C.7. The curriculum must include the following medical toxicology core content areas:

IV.C.7.a) analytical and forensic toxicology;

IV.C.7.b) assessment and population health;

IV.C.7.c) clinical assessment;

IV.C.7.d) principles of toxicology;

IV.C.7.e) therapeutics; and,

IV.C.7.f) toxins and toxicants.

IV.C.8. Fellows must have patient experience with a heterogeneous clinical spectrum of diagnoses, for patients broadly representative of society in the country or jurisdiction in which the program operates.

IV.C.8.a) Fellows must have patient experiences with diagnoses resulting from patient exposure to:

IV.C.8.a).(i) drugs;

IV.C.8.a).(ii) industrial, household, and environmental toxicants;

IV.C.8.a).(iii) natural products; and,

IV.C.8.a).(iv) other xenobiotics.

IV.C.8.b) Each fellow must evaluate and manage at least 25 patients with acute or chronic workplace occupational and environmental exposures over the course of the educational program.

IV.C.8.b).(i) These patients must be seen in an occupational medicine or toxicology clinic, or as occupational medicine patients in a referral setting.

IV.C.8.c) Each fellow must provide care for at least 200 acutely poisoned patients over the course of the program.

IV.C.8.c).(i). These patients must represent all age groups and populations.

IV.C.8.c).(ii) At least 10 percent of acutely poisoned patients should be children.

IV.C.9. Fellows must have experience in evaluating and managing patients with workplace and environmental exposures and must have experience in workplace evaluation, as well as in an occupational medicine or toxicology clinic.

IV.C.10. Fellows must be provided opportunities to teach and participate in undergraduate, graduate, and continuing education activities.

IV.C.11. Fellows must document required patent care experiences.

IV.C.12. Fellows should have experience in hyperbaric oxygen therapy as available in the country or jurisdiction.

IV.C. Scholarly Activity

IV.D.1. Fellows' Scholarly Activity

IV.D.1.a) The curriculum must advance fellows' knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care.

IV.D.1.b) Fellows must participate in research or scholarly activity that includes at least one of the following:

IV.D.1.a).(i) peer-reviewed funding and research;

IV.D.1.a).(ii) publication of original research or review articles; or,

IV.D.1.a).(iii) presentations at local regional, or national professional and scientific society meetings.

IV.D.1. b) Fellows must complete a scholarly project prior to graduation.

IV.D.2. Faculty Scholarly Activity

IV.D.2.a) All core faculty members must demonstrate significant contributions to the subspecialty of medial toxicology through scholarly activity.

IV.D.2.b) Each core physician faculty member must demonstrate at least one piece of scholarly activity per year, averaged over the past five years.

V. Evaluation

V.A. Fellow Evaluation

V.A.1. Assessment of procedural competence should include a formal evaluation process and not be based solely on a minimum number of procedures performed.

V.B. Clinical Competency Committee

See International Foundational Requirements, Section V.B.

V.C. Faculty Evaluation

See International Foundational Requirements, Section V.C.

V.D. Program evaluation and Improvement

See International Foundational Requirements, Section V.D.

V.E. Program evaluation Committee

See International Foundational Requirements, Section V.E.

VI. The Learning and Working Environment

VI.A. Principles

See International Foundational Requirements, Section VI.A.

VI.B. Patient Safety

See International Foundational Requirements, Section VI.B.

VI.C. Quality Improvement

See International Foundational Requirements, Section VI.C.

VI.D. Supervision and Accountability

VI.D.1. The program must have clear guidelines that delineate which Competencies must be met to determine when a fellow can progress to be supervised indirectly.

VI.E. Professionalism

See International Foundational Requirements, Section VI.E.

VI.F. Well-Being

See International Foundational Requirements, Section VI.F.

VI.G. Fatigue

See International Foundational Requirements, Section VI.G.

VI.H. Transitions of Care

See International Foundational Requirements, Section VI.H.

VI.I. Clinical Experience and Education

See International Foundational Requirements, Section VI.I.

VI.J. On-Call Activities

See International Foundational Requirements, Section VI.J.