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Integrative Medicine in Preventive Medicine Education: Competency and Curriculum Development for Preventive Medicine and Other Specialty Residency Programs

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Abstract

During 2012, the USDHHS's Health Resources and Services Administration funded 12 accredited preventive medicine residencies to incorporate an evidence-based integrative medicine curriculum into their training programs. It also funded a national coordinating center at the American College of Preventive Medicine, known as the Integrative Medicine in Preventive Medicine Education (IMPriME) Center, to provide technical assistance to the 12 grantees. To help with this task, the IMPriME Center established a multidisciplinary steering committee, versed in integrative medicine, whose primary aim was to develop integrative medicine core competencies for incorporation into preventive medicine graduate medical education training. The competency development process was informed by central integrative medicine definitions and principles, preventive medicine's dual role in clinical and population-based prevention, and the burgeoning evidence base of integrative medicine. The steering committee considered an interdisciplinary integrative medicine contextual framework guided by several themes related to workforce development and population health. A list of nine competencies, mapped to the six general domains of competence approved by the Accreditation Council of Graduate Medical Education, was operationalized through an iterative exercise with the 12 grantees in a process that included mapping each site's competency and curriculum products to the core competencies. The competencies, along with central curricular components informed by grantees' work presented elsewhere in this supplement, are outlined as a roadmap for residency programs aiming to incorporate integrative medicine content into their curricula. This set of competencies adds to the larger efforts of the IMPriME initiative to facilitate and enhance further curriculum development and implementation by not only the current grantees but other stakeholders in graduate medical education around integrative medicine training.

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Introduction

During 2012, the American College of Preventive Medicine established a national coordinating center in integrative medicine, funded by the USDHHS's Health Resources and Services Administration, which provided technical assistance regarding competency and curriculum development to 12 Health Resources and Services Administration–funded accredited preventive medicine residencies as they incorporated evidence-based integrative medicine content into their programs. Supporting this effort, the coordinating center, known as the Integrative Medicine in Preventive Medicine Education (IMPriME) Center, convened multiple stakeholder groups, including an IMPriME steering committee, partner organizations, and an IMPriME Community of Learning composed of people from different academic and healthcare professions. The IMPriME interprofessional steering committee consisted of nine content experts in integrative medicine; complementary and integrative health (as defined by NIH)¹; and public health or general preventive medicine. This committee collaborated with grantees to develop core education competencies that would be relevant to curricular design and implementation of integrative medicine in the context of preventive medicine residency programs. The partner organizations and community of learning engaged their constituencies and provided a broad base of subject matter expertise as needed throughout the project duration. The process of coordinating IMPriME efforts was consistent with the American College of Preventive Medicine's mission to improve the health of persons and populations through evidence-based health promotion, disease prevention, and systems-based approaches to improving health and health care.² This paper articulates the competency development process and related outcomes and presents curricular guidance as determined by project stakeholders as a procedure for residency programs aiming to incorporate integrative medicine content into their curricula.

Contextual Framework for Curriculum Development

As a first step in competency development, the IMPriME steering committee formed a subcommittee of three members, experienced in competency development and integrative medicine, to facilitate development of integrative medicine competencies germane to preventive medicine residency training. The subcommittee developed a broad contextual framework within which key competencies of integrative medicine curriculum might be considered for inclusion into residency curricula. The proposed framework was mindful of the following four major themes currently emphasized in health and health care:

1. health workforce learning needs;
2. health workforce interprofessional education^{3,4};
3. utogenesis⁵; and
4. integrative medicine and population health.⁶

Health Workforce Learning Needs

During the 2009 IOM Summit on Integrative Medicine and the Health of the Public, University of Texas Distinguished Professor Victor Sierpina offered insightful perspectives

regarding the doctor of the future and key characteristics of the future health workforce.⁶ These learners will need to be

1. able to become part of a multidisciplinary team;
2. skilled in using high technology and “high touch” (i.e., with a patient-centered, humanistic, and compassionate approach);
3. able to think from a prevention mindset;
4. knowledgeable in complementary and alternative practices;
5. navigators;
6. grounded in the community;
7. aligned to support social and environmental policies promoting health;
8. engaged in systems thinking;
9. focused on self-healing and homeostasis;
10. able to empower patients;
11. competent in evidence-based, outcome-focused practices; and
12. able to create healing environments.

The steering committee adopted this position to determine what competencies would be most relevant to incorporate for the IMPriME project.

Health Workforce Interprofessional Education

Integrative medicine represents both a multidisciplinary and transdisciplinary approach that involves multiple sectors and system perspectives, including interprofessional collaboration among a range of clinical partners. Interprofessional education and related competencies have been the focus of national health professions associations, integrative health, and foundations.^{3,4,7,8} These competencies are considered critical to development of new effective collaborative endeavors that serve to improve healthcare quality and cost savings. Residency training is an ideal setting during which individual learners can serve, practice, and fulfill the goals of interprofessional and team-based approaches focused on positive health outcomes.⁹ During both their training phases and later professional career paths, health professionals can find themselves challenged by the need to be nimble as they cross boundaries among various health sectors and domains. Their ability to remain adaptable and implement systems thinking is often nurtured in such settings.¹⁰ As shown in Figure 1, health is valued as an emergent state or phenomenon arising within the context of several influential factors: personalized health care, healing environments, responsible/evolvable organizations, and healthy environments. Ideally, these are the result of effective intersectoral collaboration efforts. Healthcare providers can function as boundary spanners who then promote health in powerful ways.

Salutogenesis

This health promotion is at the heart of “salutogenesis,” a term first coined by medical sociologist Aaron Antonovsky, to mean the creation of health.³ A salutogenic approach inclusive of integrative medicine has already been demonstrated to have pragmatic value in the primary care practice realm.¹¹ The salutogenesis concept is also central to complementary and integrative health disciplines involved in integrative health and medicine.¹² Salutogenesis, when practiced in the context of overall population health, will likely foster a culture of health within the population.

Integrative Medicine and Population Health

Because payment models are shifting from traditional fee for service (volume of units) to value-based payment (quality of care), critical new paths are developing for health delivery system transformation.^{13,14} Integrative medicine not only represents a comprehensive approach to healing on an individual level, but it also supports the notion that multi-tiered integrative solutions for the healthcare challenges must be creatively imagined and mindfully implemented.¹⁵ In that context, a shift from volume to value is aligned with a perceptual shift from payment for a product (e.g., a clinical encounter) to an outcome (i.e., state of health). Integrative medicine can help reframe the requisite competency development for this shift by encouraging health professionals to facilitate the achievement and maintenance of health through integrated healing partnerships rather than to provide healthcare services as a consumable good in a transactional manner. The problem of fragmentation is best explained by Kurt Strange, Editor of the *Annals of Family Medicine*, who wrote, “Treating healthcare (one word) as a commodity can unintentionally devalue health care (two words). Health care involves relationships.”¹⁶ Integrative medicine can help bridge prevention, primary care, and public health under the larger rubric of population health. Enhanced training and alignments in the public health workforce might represent effective strategies to improve multiple indicators of diminished U.S. health relative to other industrialized nations.^{4,17}

Competency Development Process

After the contextual framework was constructed, the subcommittee adopted one of the predominant integrative medicine definitions, which, along with its guiding principles, is considered critical to fully guide curriculum development and implementation of core competencies in multiple specialties. The Academic Consortium of Integrative Medicine and Health (formerly known as the Consortium of Academic Health Centers for Integrative Medicine), representing more than 60 Academic Health Centers and Systems in North America, defines integrative medicine as “the practice of medicine that reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic approaches, healthcare professionals and disciplines to achieve optimal health and healing.”¹⁸

Integrative Medicine Guiding Principles

As defined by the University of Arizona Center for Integrative Medicine,¹⁹ principles of integrative medicine include the following:

1. Patient and practitioner are partners in the healing process.
2. All factors that influence health, wellness, and disease are taken into consideration, including mind, spirit, and community, as well as the body.
3. Appropriate use of both conventional and alternative methods facilitates the body's innate healing response.
4. Effective interventions that are natural and less invasive should be used whenever possible.
5. Integrative medicine neither rejects conventional medicine nor accepts alternative therapies uncritically.
6. Good medicine is based in good science. It is inquiry driven and open to new paradigms.
7. Alongside the concept of treatment, the broader concepts of health promotion and the prevention of illness are paramount.
8. Practitioners of integrative medicine should exemplify its principles and commit themselves to self-exploration and self-development.

Subsequently, an initial list of integrative medicine competencies for incorporation into a preventive medicine residency curriculum was iteratively formulated, prioritized, and mapped to the six general domains of competence approved by the Accreditation Council of Graduate Medical Education.²⁰ The competencies subsequently were adopted by grantees and implemented in the context of their particular program needs.

Integrative Medicine in Preventive Medicine Core Competencies

The IMPriME integrative medicine competencies are outlined in Table 1. The competencies are designed for relevance at the patient and population level and under-score the view that preventive medicine is a unique specialty that balances individual-level clinical care with population-based prevention. The competencies were also selected to facilitate the following:

1. a broad-based exposure to integrative medicine rather than in-depth expertise commensurate with the completion of a specialized integrative medicine fellowship²⁴; and
2. interprofessional and team-based patient and community-centered care.

Integrative Medicine Curriculum Development

Using local and national resources, the 12 grantees combined a wealth of integrative medicine curricular materials and experiences in conceptualizing and implementing central integrative medicine principles through didactic and direct learning activities throughout their 2-year preventive medicine residency programs, easing new curricula into schedules already stretched with competing demands. Experiences often were interdepartmental, interdisciplinary, and interprofessional both at the local and national levels. Grantees

mapped their curricular content to the core competencies, which, in turn, were arranged under the following six Accreditation Council of Graduate Medical Education domains:

1. patient care;
2. medical knowledge;
3. practice-based learning and improvement;
4. interpersonal and communication skills;
5. professionalism; and
6. systems-based practice.²⁰

Drawing from grantees' work, Table 2 outlines recommended curriculum topics or learning objectives mapped to these domains. The allotted number of hours, along with the range of proposed pedagogies and topics, can vary on the basis of program priorities, capacity, time constraints, funding limitations, access to content experts, recommended instruction tools, and strategic partnerships. Additionally, the overall focus will vary on the basis of certain factors, including level of graduate medical education training when integrative medicine is introduced, setting type (ambulatory versus inpatient), and access to integrative medicine clinicians.

The curricular guidance is based on this work, provides examples of didactic and direct learning infrastructure (Table 3), and is followed in this *American Journal of Preventive Medicine* supplement by preventive medicine grantee papers describing their application of these integrative medicine curricular approaches and interventions. Examples from grantee papers include the following topics:

1. comprehensive, wellness-focused integrative medicine curriculum;
2. interprofessional education;
3. education of traditional healing practices;
4. competency mapping applications (integrative medicine and public health context);
5. multimodal integrative medicine curricula in the areas of epidemiology and exercise research;
6. integrative medicine curriculum for a preventive medicine residency program;
7. integrative medicine in preventive medicine in an urban underserved context;
8. integrative medicine education, research, and evaluation.

Didactic Learning Activities

The curriculum should offer different didactic activities designed to support the experiential (direct) learning and reinforce the competencies. Available through both inperson and online resources, didactic material can be accessed throughout the curricular implementation duration and even during the remainder of the residency training and beyond.^{25–27} Learners are expected to have opportunities to gain knowledge from each other through in-depth discussion and experience sharing.

The general integrative medicine orientation should cover the following three major areas:

1. foundational concepts and related issues;
2. methodologies and frameworks that would be expected to support the learners' clinical or field experiences; and
3. skills necessary to engage and work with patients, colleagues, institutions, and the general public.

These didactic sessions can be completed face-to-face or electronically, providing efficient and effective means to achieve learning objectives.

Learners should gain knowledge through workshops, grand rounds, case presentation, and journal clubs. For example, an integrative medicine journal club experience gives learners unique opportunities to develop skills in assessing methodologic nuances and contextualizing findings to foster an evidence-based approach to integrative medicine.

Learners should attend national and regional conferences to gain knowledge about new research findings and continuing education, foster networking opportunities, and engage with stakeholders and experts in different disciplines related to integrative medicine.

Direct Experience

Learners should engage in active participatory experiences in which they either create or fulfill opportunities that are clinically relevant. These experiences can occur in different assigned practicum sites, including clinics,¹¹ private practice settings, academic health centers, community health centers, health departments, or tertiary care settings (e.g., hospitals, skilled nursing facilities, or health systems). Under supervisor guidance and mentoring, content experts or a range of interprofessional partners can assist in teaching didactic content and the actual demonstration of specific and diverse modalities, strengthening the vicarious learning component of bed-side teaching.

Participation in observational, clinical, and basic science research in areas germane to integrative medicine should help learners gain analytical skills in critical thinking, research design, literature review, and scientific writing. In addition, these experiences help residents better communicate scientific information. Similarly, serving on committees and task forces can provide opportunities to work with interdisciplinary and inter-professional teams, influence programmatic or policy issues, and engage in collaborative decision making.

Learners can be encouraged to engage in activities that promote self-care and wellness, including personal dietary, physical activity, and stress reduction plans (optional, but recommended).

Limitations

Although the steering committee and subcommittee had ample content expertise and experience in competency and curriculum development, three critical elements (complexity, distance, and time) made the overall endeavor challenging. The task of developing a discrete number of core competencies was difficult given the substantial scope of desirable

competencies for which time, expertise, and resources were expected at the individual grantee level. The timeframe within which competencies had to be developed, reviewed, approved, and implemented along with relevant curricular guidance and related training materials was constrained. Steering committee members performed their best to conduct their communication and coordination activities in the most efficient manner with each other, the IMPriME Center, the community of learning, and the integrative medicine program grantees. Overall program evaluation is expected to guide the extent to which the process of consensus building and policy development regarding curriculum mapping could be strengthened in subsequent operations.

Conclusions

This paper has described the IMPriME competency development process and outcomes, and has offered curricular guidance advised by project stakeholders. Residency program staff members are encouraged to use IMPriME core competencies to guide their approach. They can modify the level of curricular incorporation and tailor related pedagogies to facilitate learning and meet program-specific educational and programmatic goals. Final curricula versions at the program level will necessarily depend on different constraints (e.g., available time, access to subject matter experts, scope of perceived relevance to other curriculum areas, and funding). The Clinical Prevention and Population Health Curriculum Framework²⁸ can serve as an exemplary resource in guiding next steps. The structure of integrative medicine curricula introduced into other residency programs (preventive medicine or other-wise) can be modeled after this Framework. It provides not only content outline and competencies, but also a structure for the effective organization and monitoring of curricula and a more streamlined method to communicate certain standard components of preventive medicine education and training. Program-specific curricular guidance must be developed by variation in adult learning needs, specialty areas and curricula, and availability of integrative medicine experts. Other competency-based curriculum mapping tools also are readily available.^{29,30} The IMPriME competency and curriculum development process and related outcomes complement these resources in guiding the incorporation of integrative medicine content into the curriculum of preventive medicine residency programs and other health training programs. The IMPriME initiative contributes to the aggregate work on competency and curriculum development and implementation related to integrative medicine and will likely benefit many stake-holders in graduate medical education interested in facilitating deeper learning about the process of “healing” and promoting health across boundaries.¹⁰

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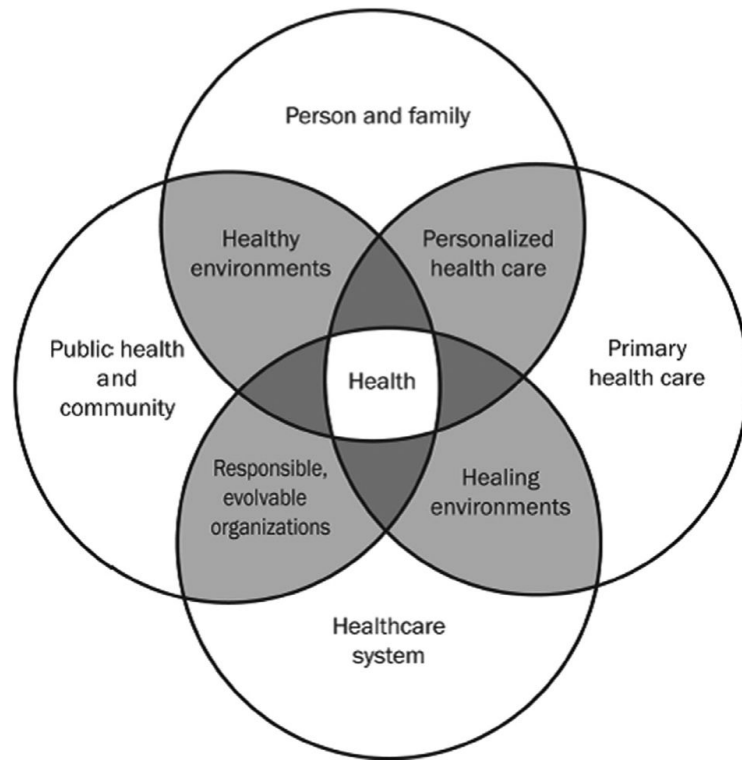


Figure 1.
Promoting health across boundaries.¹⁰

Table 1**IMPriME Core Competencies Mapped to the Six ACGME General Competency Domains**

| |
|---|
| ACGME–IV.A.5.a: Patient Care |
| 1. Demonstrate critical component understanding of an integrative medicine patient assessment, including the following: (a) a prevention-oriented, patient-centered, and lifestyle-focused history; and (b) behavioral, psychoemotional, social, and cultural determinants and environmental factors. 2. Articulate the demonstrated and potential roles of integrative medicine in primary, secondary, and tertiary prevention to promote individual and population health. |
| ACGME–IV.A.5.b: Medical Knowledge |
| 3. Demonstrate basic understanding of the following: (a) integrative medicine theories and approaches; (b) integrative medicine epidemiology and cost; (c) safety and efficacy of integrative medicine therapies; (d) training and certification of integrative medicine providers; and (e) related integrative medicine resources. 4. Demonstrate basic understanding of how relevant integrative medicine principles and management strategies can be applied to individual and population-based care. |
| ACGME–IV.A.5.c: Practice-Based Learning and Improvement |
| 5. Demonstrate a basic capacity to incorporate self-care and self-management principles ^{21,22} into individual and population-based practice settings as part of effective patient and community education about health promotion and disease prevention. 6. Demonstrate basic understanding of the diverse range of biocultural perspectives ²³ held by patients, providers, families, and communities as they relate to integrative medicine. |
| ACGME–IV.A.5.d: Interpersonal and Communication Skills |
| 7. Demonstrate how to use the integrative medicine lexicon in patient and provider communication while also performing the following activities: (a) engaging in active listening; (b) facilitating culturally sensitive patient communication; (c) conducting motivational interviewing; and (d) implementing patient-centered shared decision making. |
| ACGME–IV.A.5.e: Professionalism |
| 8. Optimize interprofessional collaboration, such as by demonstrating a basic understanding of the standards, training, credentialing, expertise, knowledge, and skills of a multidisciplinary team that uses integrative medicine approaches. |
| ACGME–IV.A.5.f: Systems-Based Practice |
| 9. Provide leadership through effective communication with lay, scientific, and professional communities about how evidence-based cost-effective integrative medicine approaches can positively influence patient care, population and environmental health, and health care delivery. |

IMPriME, Integrative Medicine in Preventive Medicine Education; ACGME, Accreditation Council of Graduate Medical Education.

Table 2

Core Topics or Learning Objectives for Incorporation into Preventive Medicine and Primary Care Curriculum as a Function of the Six ACGME Competency Domains

| | |
|---|--|
| ACGME–IV.A.5.a: Patient Care | |
| <ul style="list-style-type: none"> • Conduct an integrative medicine assessment, including history, physical and clinical assessment or diagnosis in the context of psychosocial, cultural, and environmental aspects. • Develop an integrative medicine therapeutic plan by combining the most relevant evidence-based recommendations across the spectrum of conventional and nonconventional care systems. • Demonstrate basic understanding of lifestyle medicine as a fundamental pillar of integrative medicine. • Identify those factors that support human health and well-being, rather than those that cause disease. | |
| ACGME–IV.A.5.b: Medical Knowledge | |
| <ul style="list-style-type: none"> • Differentiate between evidence-based and evidence-guided practice and quality of evidence and critical thinking regarding integrative medicine and conventional medical literature. • Demonstrate basic understanding of the following medical treatments. 1. Medical systems, including Ayurveda, traditional Chinese medicine, homeopathy, naturopathy, and other traditional health systems. 2. Common complementary and integrative health approaches, including therapeutic nutrition (e.g., dietary supplements); botanical medicine; acupuncture; tai chi; yoga; mindfulness and meditation; and energy medicine. 3. Manual medicine disciplines, including osteopathy, chiropractic medicine, and therapeutic massage. | |
| ACGME–IV.A.5.c: Practice-Based Learning and Improvement | |
| <ul style="list-style-type: none"> • Discuss patient safety in the context of complementary and integrative health-related modalities. • Leverage cultural effectiveness in community health. • Design a patient care quality improvement plan, keeping in mind integrative medicine modalities. • Use integrative medicine approaches for specific populations and health conditions. • Identify self-care best practices for health care provider well-being. • Develop learning and practicing mind-body medicine and mindfulness. | |
| ACGME–IV.A.5.d: Interpersonal and Communication Skills | |
| <ul style="list-style-type: none"> • Scientific communication and facilitating adherence among diverse patient populations. • Engaging with an interdisciplinary and interprofessional team. | |
| ACGME–IV.A.5.e: Professionalism | |
| <ul style="list-style-type: none"> • Collaborate with the team of integrative medicine practitioners about training, licensing, regulation, scope of practice, referrals, and interprofessional practice models. • Incorporate cultural perspectives into integrative approaches and potential patient outcomes; tailoring therapeutic modalities. | |
| ACGME–IV.A.5.f: Systems-Based Practice | |
| <ul style="list-style-type: none"> • Discuss paradigms of health and health care services, including U.S. and global perspectives. • Demonstrate understanding of the U.S. health care system and role of integrative medicine in health system transformation. • Discuss the key principles of integrative medicine in the context of population health. • Apply patient-centered medical home model principles in the context of integrative medicine. • Discuss significance of the Affordable Care Act (ACA) to integrative medicine. | |

ACGME, Accreditation Council of Graduate Medical Education.

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Table 3

Curriculum Development: Didactic and Direct Learning Components

| 1. Type of didactic experience | Description |
|---|---|
| A. Integrative medicine general orientation | Activities that can be delivered through online self-paced modules, in-person instruction or webinars and seminars, and rendered in short- or long-term discrete or longitudinal intervals. |
| B. Active learning or teaching | Teaching that can be delivered through workshops, grand rounds, case discussion, or journal clubs. |
| C. National conferences | Attendance or presentation at national integrative medicine meetings that are focused on either clinical care or research. |
| 2. Nature of experiential activity | Description |
| A. Patient care | Activities that are linked with or focused on integrative approaches to patient care and which can occur in assigned practicum sites (e.g., clinics, private practice settings, academic health centers, community health centers, health departments, or tertiary care settings). Activities should be under the guidance of a qualified supervisor either experienced in integrative medicine approaches or conversant with nonconventional approaches and services, as part of an interprofessional and interdisciplinary health care team. |
| B. Research and leadership | Participation in planning, development, or implementation of research studies. Participation in committee, task force, or group activities. |
| C. Integrative healthcare approaches | Facilitate learner engagement in activities that promote self-care and wellness (e.g., personal dietary, physical activity, and stress reduction plans). (This is optional, but recommended). |

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