

Integrative Medicine in Preventive Medicine Education Implementation Analysis



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In September 2012, the Health Resources and Services Administration funded 12 preventive medicine residency programs to participate in a 2-year project aimed at incorporating integrative medicine (IM) into their residency training programs. The grantees were asked to incorporate competencies for IM into their respective preventive medicine residency curricula and to provide for faculty development in IM. The analysis conducted in 2014–2015 used the following evidence to assess residency programs' achievements and challenges in implementation: progress and performance measures reports, curriculum mapping of program activities to IM competencies, records of webinar participation, and post-project individual semi-structured phone interviews with the 12 grantee project leaders. Key findings are: (1) IM activities offered to residents increased by 50% during the 2 years; (2) Accessing IM resources already in existence at local grantee sites was the primary facilitator of moving the integration of IM into preventive medicine residencies forward; (3) Among all activities offered residents, rotations were perceived by grantees as by far the most valuable contributor to acquiring IM competencies; (4) Online training was considered a greater contributor to preventive medicine residents' medical knowledge in IM than faculty lectures or courses; (5) Faculty were offered a rich variety of opportunities for professional development in IM, but some programs lacked a system to ensure faculty participation; and (6) Perceived lack of evidence for IM was a barrier to full program implementation at some sites. Grantees expect implemented programs to continue post-funding, but with decreased intensity owing to perceived faculty and curriculum time constraints.

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Introduction

In September 2012, the Health Resources and Services Administration (HRSA) funded 12 preventive medicine residency (PMR) programs to participate in a 2-year project aimed at incorporating integrative

medicine (IM) into their training programs. The HRSA funding announcement gave a definition of IM from the IOM's 2009 Summit on Integrative Medicine and the Health of the Public: "...orienting the health care process to create a seamless engagement by patients and caregivers of the full range of physical, psychological, social, preventive, and therapeutic factors known to be effective and necessary for the achievement of optimal health throughout the life span."¹ At the same time, HRSA funded a coordinating center for IM through a cooperative agreement with the American College of Preventive Medicine. The coordinating center's steering committee charged a subcommittee of its members with the task of developing IM competencies to be incorporated into PMR training. These IM curriculum competencies were meant to reflect population-based public health aspects of preventive medicine as well as individual patient treatment. Through an iterative process including

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grantee input, the subcommittee arrived at a set of nine core IM competencies, mapped to the six general domains of competence approved by the Accreditation Council of Graduate Medical Education. Table 1 lists the resulting competencies.

The twelve PMR grantees were asked to achieve three goals set forth for them by HRSA:

1. incorporate evidence-based integrative medicine content into their existing residency programs;
2. provide faculty development to improve clinical teaching in evidence-based IM; and
3. assess the degree to which curriculum implementation facilitated competency development among residents.

The present paper describes implementation of the IM project by the 12 programs and examines facilitators and barriers to that implementation. The paper next considers implications for program sustainability that emerged from the evidence, and summarizes key findings. It

concludes with a few recommendations of possible practical value in continuing the incorporation of IM into PMR programs.

Methods

Data sources for this analysis conducted in 2014–2015 consisted of:

1. materials submitted by grantees as part of their funding agreement (two progress reports, three performance measures reports, and curriculum competency mapping);
2. records provided by the coordinating center on webinar participation; and
3. post-project individual semi-structured phone interviews, consisting of open qualitative questions and Likert-scaled items, with the 12 grantee project leaders.

Implementation

In performance measures records submitted at the end of the first year of this project, the grantees reported offering 35 IM training activities in their PMRs, of which

Table 1. Core IM Competencies for Incorporation into Preventive Medicine Curricula

<p>ACGME—IV.A.5.a: Patient Care</p> <ol style="list-style-type: none"> 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.
<p>ACGME—IV.A.5.b: Medical Knowledge</p> <ol style="list-style-type: none"> 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.
<p>ACGME—IV.A.5.c: Practice-Based Learning and Improvement</p> <ol style="list-style-type: none"> 5. Demonstrate a basic capacity to incorporate self-care and self-management principles 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 held by patients, providers, families, and communities as they relate to integrative medicine.
<p>ACGME—IV.A.5.d: Interpersonal and Communication Skills</p> <ol style="list-style-type: none"> 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.
<p>ACGME—IV.A.5.e: Professionalism</p> <ol style="list-style-type: none"> 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.
<p>ACGME—IV.A.5.f: Systems-Based Practice</p> <ol style="list-style-type: none"> 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.

ACGME, Accreditation Council of Graduate Medical Education; IM, integrative medicine.

18 (51.4%) were newly developed and 17 (48.6%) were enhancements to existing activities. By the end of Year 2, the number of training activities had increased by almost 48.6%, to 52, according to data submitted by grantees as part of a curriculum mapping report. For this report, grantees were asked to enter their residency program activities on an online table containing the nine core curriculum competencies established by the coordinating center for this project. The authors created an aggregate mapping of program activities to curriculum competencies by collapsing the > 50 types of activities reported by grantees into 15 activity categories (Table 2). The data represent 11 PMR programs, as one grantee did not complete the mapping.

Although grantees mapped online their sites' activities to the core set of IM curriculum competencies provided by the IM coordinating center (Table 2), not all of the grantees actually used those exact competencies for their own preventive medicine IM curriculum. In post-project phone interviews, several leaders noted that their site's curriculum competencies were a blend of those provided by the IM coordinating center and ones developed locally by their site, and one noted that their competencies were completely their own. However, no differences in actual curriculum content (e.g., taught topics, offered activities) were noted by the 11 grantees completing the competency mapping; none reported difficulty in matching their program's activities to the set of core competencies. Moreover, the coordinating center did not report any substantial differences between the latter and those developed by any of the grantees.

Rotations were perceived by grantees as by far the most valuable contributor to IM competencies. In a rotation, a resident spends a concentrated block of time working under supervision in a specialty area. For preventive medicine residents, it is important to note that this specialized training might focus on public health aspects of IM or on individual patient treatment. For the latter, a resident could be practicing or observing a particular treatment procedure, or might instead be participating in the clinical experience by conducting patient histories and other assessments. Ninety percent of grantees identified rotations as contributing to an understanding of the critical components of an IM patient assessment, and 72.7% as demonstrating the potential roles of IM in primary, secondary, and tertiary prevention. Rotations were reported by 72.7% of grantees as contributing to interpersonal and communication skills and as more likely (63.6%) than seminars (45.5%) and case conferences (27.3%) to contribute to medical knowledge on how relevant IM principles and management strategies are to individual- and population-based care. The competencies in the practice-based learning

and improvement domain were also seen to be fulfilled more through rotations (63.6% and 72.7%) than through any of the other activities.

Online training, in the form of whole courses, modules, and webinars, were reported as significant contributors to medical knowledge, with 54.5% reporting these activities as demonstrating familiarity with IM theories, epidemiology, and safety and efficacy of IM therapies, and 63.6% as demonstrating the application of IM principles and management strategies to individual- and population-based care. By contrast, faculty lectures or courses were cited less frequently as contributing to any of the curriculum competencies: 18.2% and 9.1%, respectively, reported their contribution to medical knowledge. The perceived superior contribution of online training to medical knowledge of residents is consistent with reported results of an assessment of online training in IM with family medicine residents and with other studies comparing e-learning to more traditional methods of learning that have found that trainees learned more efficiently and had higher satisfaction rates with e-learning.^{2,3}

Integrative medicine practice with patients was cited less than any other activity in contributing to any competencies, and it was not reported at all for six of them. In post-project phone interviews, some project leaders noted that it was not an objective of their residency program to see residents actually practice IM, referring here to hands-on use of complementary and alternative medicine (CAM) modalities with patients. Also, the funder had not specified clinical practice of IM by PMR residents as a goal. Instead, the goal was for PMR residents to be exposed to and knowledgeable about the variety of CAM modalities available to incorporate into an IM practice through patient referral or treatment. On a 5-point Likert scale item administered as part of the phone interviews and where 1=strongly agree and 5=strongly disagree with the statement, *The preventive medicine curriculum at my site prepares residents to actually practice IM or CAM*, the mean score of the leaders' responses was 3.2, thus suggesting they neither agreed nor disagreed.

Faculty members in the 12 PMR programs were exposed to a wide variety of development activities: They were generally encouraged to participate in, observe, or sometimes teach or lead the large set of activities made available to residents (Table 2). For activities specifically intended for faculty development, the range of approaches can be seen in two extreme examples: One grantee prioritized IM education of core faculty, with the expectation they become educated in, and able to teach, IM. These core faculty did directed reading, participated in training workshops, and attended conferences. The

Table 2. Curriculum Competency Mapping of Grantee Activities

Activities	IM in PM Curriculum Competencies								
	Patient care		Medical knowledge		Practice-based learning and improvement		Interpersonal and communication skills	Professionalism	Systems-based practice
	Comp 1	Comp 2	Comp 3	Comp 4	Comp 5	Comp 6	Comp 7	Comp 8	Comp 9
Rotations	90.0 (10)	72.7 (8)	36.4 (4)	63.6 (7)	63.6 (7)	72.7 (8)	72.7 (8)	45.5 (5)	54.5 (6)
Seminar/IM orientation	18.2 (2)	72.7 (8)	63.6 (7)	45.5 (5)	27.3 (3)	27.3 (3)	36.4 (4)	54.5 (6)	54.5 (6)
Case conferences	27.3 (3)	27.3 (3)	18.2 (2)	27.3 (3)	18.2 (2)	9.1 (1)	18.2 (2)	18.2 (2)	9.1 (1)
Faculty lectures/courses	0 (0)	0 (0)	18.2 (2)	9.1 (1)	0 (0)	9.1 (1)	9.1 (1)	9.1 (1)	9.1 (1)
Online courses/modules/education/webinars	18.2 (2)	18.2 (2)	54.5 (6)	63.6 (7)	18.2 (2)	18.2 (2)	27.3 (3)	18.2 (2)	36.4 (4)
Journal club	9.1 (1)	18.2 (2)	54.5 (6)	27.3 (3)	9.1 (1)	0 (0)	9.1 (1)	9.1 (1)	27.3 (3)
Grand rounds	9.1 (1)	27.3 (3)	45.5 (5)	27.3 (3)	9.1 (1)	0 (0)	9.1 (1)	27.3 (3)	9.1 (1)
Lecture series/Presentation by IM practitioners	18.2 (2)	18.2 (2)	27.3 (3)	27.3 (3)	0 (0)	18.2 (2)	18.2 (2)	27.3 (3)	9.1 (1)
IM research projects	0 (0)	0 (0)	18.2 (2)	27.3 (3)	18.2 (2)	27.3 (3)	9.1 (1)	9.1 (1)	27.3 (3)
Attending conferences/national IM conferences	0 (0)	0 (0)	18.2 (2)	27.3 (3)	9.1 (1)	0 (0)	0 (0)	27.3 (3)	18.2 (2)
Training/workshops	18.2 (2)	27.3 (3)	18.2 (2)	27.3 (3)	54.5 (6)	9.1 (1)	36.4 (4)	36.4 (4)	18.2 (2)
IM self-care and practice/retreat	0 (0)	0 (0)	27.3 (3)	18.2 (2)	63.6 (7)	9.1 (1)	9.1 (1)	27.3 (3)	9.1 (1)
Library research	0 (0)	0 (0)	27.3 (3)	18.2 (2)	18.2 (2)	0 (0)	0 (0)	9.1 (1)	9.1 (1)
IM practice with patients	9.1 (1)	9.1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	9.1 (1)	0 (0)	0 (0)
Fieldwork	18.2 (2)	27.3 (3)	18.2 (2)	18.2 (2)	9.1 (1)	9.1 (1)	18.2 (2)	18.2 (2)	9.1 (1)

Note: Data are presented as % (number) of PMR programs.
 Comp, competency; IM, integrative medicine; PM, preventive medicine; PMR, preventive medicine residency.

knowledge base and assumed shared commitment to IM of core faculty thus puts this site in a good position for program sustainability. At the opposite extreme, commitment to IM at another site was seen to reside primarily with the project leader: She became a valuable resource for their very active IM project, but should she leave, there could be little left of an IM focus in their program.

Beyond these two examples, there was a range of models of intended faculty development: For instance, one grantee delegated co-leadership responsibility for this project to the newest faculty member, thus assuring that IM would be a priority for him. Several grantees recommended faculty participation in one of the Arizona Center for Integrative Medicine online trainings, but some faculty did not find the time to complete it.⁴ The coordinating center offered 16 IM webinars, available to grantee faculty from June 2013 through March 2015. The webinars were well received by participants, with scores ranging from 3.4 to 4.0 on a 4-point scale in which 4 indicates agreement with the statement: *Information will be useful in my work.*

The limited contributions of faculty lectures and courses to IM curriculum competencies noted earlier likely reflect the early stage of professional development in IM of some of the faculty. By contrast, online training of residents was offered by seasoned IM experts. Lack of sustained engagement by faculty in professional development activities for IM because of workload and competing priorities was reported as a challenge by project leaders.

Facilitators and Barriers to Implementation

Connecting with local resources was by far the prime facilitator of moving the integration of IM into PMR programs forward. These connections with existing IM resources also constituted the most prevalent step toward sustainability reported in grantees' progress reports and subsequently discussed in post-project phone interviews with project leaders. HRSA funds served as a catalyst for forging connections with a variety of IM entities that had "always been there," as one project leader noted, but had not previously been utilized by the respective PMR programs. In most cases, the existing IM resources were very near at hand: For instance, one program made use of an existing in-house IM course offered by another department, and another grantee initiated collaborations with nationally recognized IM scholars at her own institution. One grantee reported combining two existing programs, the family medicine IM program and the preventive medicine program, as the crowning achievement of their project, providing "the missing link" for potential sustainability. Also within their own institutions, some grantees reported more multidisciplinary

collaborations, which then were reflected in PMR curricula. In some cases, grantees began interacting with other organizations, including community health centers and programs and centers at other academic institutions. Some new connections were less concrete, but no less meaningful: For example, one grantee characterized the experience of new connections as simply a greater awareness by faculty of traditional healing in their local community; this IM project gave them an opportunity to focus on what had always been around them.

Residents' positive interest in learning about IM served to spur IM program implementation, according to several project leaders, who also perceived positive interest in IM by residents as a signal for sustaining the program. However, some grantees were met with skepticism by less-interested residents.

Interpersonal support provided by the IM coordinating center and the funder was rated as high as the funding itself in having a positive impact on grantees' ability to enhance IM in their respective curricula. That support took the form of regular conference calls, sharing of information online, and in-person meetings at two annual American College of Preventive Medicine conferences.

Finding time for IM activities—both to implement and participate in them—was a prevalent challenge for grantees. In a content analysis of progress reports, the top two noted challenges were curriculum and faculty time constraints, both mentioned by approximately three quarters of grantees. The former referred to the great amount of preventive medicine content already needed for the residency program even without the addition of any new IM content, and the latter referred to the usual demands of academic medicine positions requiring teaching, research, clinical practice, and administration.

The brief 2-year time period of the project itself was also a challenge. For some grantees, this problem was exacerbated by a delay in receiving the set of core curriculum competencies from the coordinating center. The coordinating center, in turn, was disadvantaged by having been funded simultaneously with, rather than ahead of, grantees.

Perceived lack of evidence for IM was a challenge for a few grantees, whether in persuading residents to participate in educational IM activities, or as for two grantees, convincing faculty of the value of adding IM to the curriculum. The main stumbling block for those grantees was the inclusion of CAM modalities as part of IM. Acceptance of educational programming on CAM modalities may have come more naturally for grantee sites located in geographic environments with high visibility of CAM practice by community members. It is well established that patients themselves integrate CAM with Western medicine.⁵ However, a national study has reported that the majority of patients do not

discuss their CAM use with their physicians; accordingly, it is possible that residents and faculty at grantee sites in environments where individual use of alternative treatment modalities are less salient may have been less open to learning about those practices.⁶

It is worth noting here that the IOM definition of IM guiding this project does not require inclusion of what are generally thought of as CAM modalities, and the funder did not require CAM inclusion.¹ Nonetheless, it is widely held that IM comprises both conventional Western and CAM practices.⁷ Some grantees dealt with their concerns regarding evidence by concentrating their new IM program content heavily on lifestyle medicine approaches long recognized as hallmarks of preventive medicine (e.g., exercise, smoking cessation, nutrition content).

Potential for sustainability is an essential criterion against which to assess the success of project implementation. The funder took one step to increase the prospects of sustainability by focusing funding on a tapestry model of incorporating IM into existing PMR programs.⁸ Still, now that grant funding has ended, will a focus on IM remain in the 12 PMR programs?

On a 5-point Likert-scale item administered to project leaders post-project, their ratings ranged from *strongly agree* to *somewhat disagree* with the statement: *Although the HRSA-funded project has ended, our site will be continuing the enhanced IM activities indefinitely*. The mean rating was 1.9, indicating *somewhat agreeing*. The most prevalent expectations were for IM rotations to continue, but only as elective rotations, and for didactic experiences in the form of lectures and grand rounds on IM to continue, but with less frequency.

The salient role of connecting with local resources in implementing the IM project has been described above, and grantees wrote (in progress reports) and spoke (in interviews) concretely about the value of those connections in the form of knowing who to call to deliver a lecture, where to place residents for rotations, and how to find information on an IM topic quickly. Undoubtedly these connections can play a strong role in the continuance of IM program activities and do so with little or no need for additional funding; still, the extent to which they do so may depend on other factors linked to program sustainability. One such factor has to do with implementation choices made at each site. Those grantee sites in which the project was implemented with a focus on intensive development of core faculty will likely have a better shot at continuing their enhanced IM activities than those in which faculty participation in development activities fell off over time. In the same vein, grantees who established a schedule of ongoing meetings with new local IM connections will be better positioned to continue to benefit from those resources than will grantees

whose interactions with new IM associates was left on a contact-as-needed basis.

Time, or lack thereof, remains the most pervasive perceived challenge to IM in PMR program sustainability just as it was to implementation. The faculty and curriculum time constraints noted by this project's grantees duplicate those reported in 2007 for integration of CAM into health professions education.⁹ Given the reality of already crammed faculty workloads, time spent by faculty in increasing their knowledge and skills for teaching IM will need to be offset by reductions in time required for other responsibilities. Most grantees reported evidence of considerable enthusiasm among faculty participating in the IM project; however, it may not be realistic to count on enthusiasm alone to sustain faculty engagement.

Reported curriculum time constraints refer to a perceived difficulty in finding time within existing PMR curricula for additional IM content. This perception may suggest a need for further discussion of what it means, at a practical level, to practice and teach IM. The 2009 IOM report's definition of IM given above in the introduction lends itself to interpretation as a way to practice preventive medicine (and other medical specialties as well as health care in general).¹ From this perspective, IM is not something added to preventive medicine; rather, one can consider that the goal for projects such as this one is for preventive medicine to be practiced and taught as IM. When IM is conceptualized as a way to practice medicine (rather than as a body of treatment modalities), one can perhaps think of sustaining the residency education programs in a manner not requiring immediate, extensive additions to subject matter taught, but more as a gradual embracing over time of a way of thinking about and practicing preventive medicine. The lingering caveat, of course, is that the gradual embracing would still seem to suggest the folding in of CAM modalities.

Conclusions

This analysis has been an after-the-fact review of grantees' activities and experiences and is limited by the absence of pre- and post-project assessments of resident and faculty knowledge, interest, and attitudes regarding IM. The variation in curriculum competencies used by the 12 participating PMR programs is a further limitation: Though evidence suggests that there were no significant practical differences in curriculum programming resulting from the differing sets of competencies, a standardized set of curriculum competencies used by all grantees might have been more fruitful in moving the field forward in the integration of IM into PMR. Finally, it is worth noting that the set of core competencies does not include one focused on spirituality. Given the central role of spirituality in IM reported in the literature,

consideration might be given to explicitly including it as a curriculum competency.^{3,10,11}

The authors have learned that the 12 participating grantee programs offered their residents a large number of educational activities and participatory experiences of value to IM, increasing the number of such activities by approximately 50%. The grantees made remarkable progress in a 2-year period in integrating IM content—from a variety of perspectives—into their PMR programs, and in the course of doing so, raised significant questions to be further discussed among the larger preventive medicine community and beyond. Foremost among these may be the question of the extent to which inclusion of CAM procedures is essential to the practice of IM. The IOM definition of IM that guided this project, though well capturing the spirit of the practice of IM, offers little guidance in answering this practical question. The definition refers to “therapeutic factors known to be effective and necessary...” a description that might be applied to justify including or excluding CAM modalities.

Key findings are summarized below.

1. Accessing IM resources already in existence at local grantee sites was the primary facilitator of incorporating IM into preventive medicine residencies.
2. Curriculum competencies employed by grantees represented a mix of the core set provided by the IM coordinating center and ones developed locally.
3. Among all activities offered residents, rotations were perceived by grantees as by far the most valuable contributor to acquiring IM competencies.
4. Online training was considered a greater contributor to PMR trainees’ medical knowledge in IM than faculty lectures or courses.
5. Faculty members were offered a rich variety of opportunities for development in IM, but some programs lacked a system to ensure faculty participation.
6. Perceived faculty and curriculum time constraints were the most frequently mentioned barriers to project implementation.
7. Perceived lack of evidence for IM was a barrier to program implementation for some grantees.
8. Most grantee project leaders expect the IM focus on activities in their PMR programs to continue even now that funding has ended.

Recommendations

The recommendations below are for any future initiatives similar to the project reported on here.

1. Each PMR program should develop a protocol for ensuring faculty members are able to find the time to

participate in IM development activities. In most cases, this will involve trade-offs: reducing faculty responsibilities for other activities during time spent developing their IM knowledge and skills. It could be helpful for funders to ask for evidence in potential grantees’ proposals of how faculty members will be enabled to engage in faculty development without increasing the workload burden for either participating or non-participating faculty members.

2. There is a continuing need for pre- and post-test design assessments of knowledge, experience, and attitudes regarding IM among PMR trainees and faculty. In addition, parallel assessments with patients and their providers could be particularly valuable if extended over a period of several years or more.
3. A workshop in the style of a think tank among preventive medicine program leaders should be convened to discuss research needs for IM from a practical perspective: In which modalities are PMRs most interested? What CAM procedures would preventive medicine physicians like to offer or recommend to their patients if they were confident in the evidence base? What CAM modalities would preventive medicine physicians like to see disseminated on a population-wide basis, pending more rigorous research findings of their safety and effectiveness? With the NIH’s newly re-designated National Center for Complementary and Integrative Health, the time could be right for looking at such practical considerations.

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DB led the data analyses and wrote the paper. JT contributed to the concept, structure, and content, and gave substantive feedback on central material. IS provided multiple source documents, monitored the evaluation process, and gave substantive feedback on the manuscript. SA reviewed and gave substantive feedback on the manuscript. SC reviewed and gave substantive feedback on the manuscript. MD reviewed and gave substantive feedback on the manuscript.

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