Integrative Medicine in a Preventive Medicine Residency

A Program for the Urban Underserved

Jonathan P.B. Berz, MD,[1] Katherine A. Gergen Barnett, MD,[2] Paula Gardiner, MD,[2] Robert B. Saper, MD[2]

The Preventive Medicine Residency Program collaborated with the Department of Family Medicine's Program for Integrative Medicine and Health Disparities at Boston Medical Center to create a new rotation for preventive medicine residents starting in autumn 2012. Residents participated in integrative medicine group visits and consults, completed an online curriculum in dietary supplements, and participated in seminars all in the context of an urban safety net hospital. This collaboration was made possible by a federal Health Resources and Services Administration grant for integrative medicine in preventive medicine residencies and helped meet a need of the program to increase residents' exposure to clinical preventive medicine and integrative health clinical skills and principles. The collaboration has resulted in a required rotation for all residents that continues after the grant period and has fostered additional collaborations related to integrative medicine across the programs.

(Am J Prev Med 2015;49(5S3):S290–S295)

Introduction and Curricular Goals and Objectives

This paper details the collaboration between Boston University Medical Center's (BMC's) Preventive Medicine and Integrative Medicine programs that resulted from the U.S. Health Resources and Services Administration Integrative Medicine in Preventive Medicine Education grant awarded in autumn 2012, discusses some preliminary results, and details next steps. At BMC, the grant fostered the collaboration between two well-established programs, the Preventive Medicine Residency Program in the Division of General Internal Medicine and the Program for Integrative Medicine and Health Disparities in the Department of Family Medicine.

Boston Medical Center is a private, not-for-profit, 626-licensed-bed, academic medical center and the primary teaching affiliate for Boston University School of Medicine. BMC was formed in 1996 through the merger of Boston City Hospital (founded in 1855) and Boston University Hospital and is the largest safety net hospital in New England. It has a long legacy of commitment to innovation in response to the healthcare needs of high-risk, underserved, and culturally diverse populations. Approximately 70% of patients come from underserved racial/ethnic-minority populations and it places a strong premium on serving low-income families, elders, people with disabilities, immigrants, and the homeless. Thirty percent do not speak English as a primary language.

Although integrative medicine and complementary and alternative medicine (CAM) is used by approximately one third of U.S. adults, use among minorities and individuals with lower income or education is less common.[1–4] As federal, private, and academic stakeholders invest millions of dollars into integrative medicine research, education, and clinical services, it is imperative that multicultural communities and vulnerable populations have equal access. To address this need, the BMC Program for Integrative Medicine and Health Disparities Program was established in 2004 out of a strong conviction that safe, effective, integrative therapies should be available to everyone without regard to ability to pay. The mission of this program is to create a national model to demonstrate the role integrative medicine can play in improving the health and quality of life for patients regardless of income, advance this model

From the [1]Section of General Internal Medicine, Boston University School of Medicine, Boston, Massachusetts; and [2]Department of Family Medicine, Boston University School of Medicine, Boston, Massachusetts

Address correspondence to: Jonathan P.B. Berz, MD, Section of General Internal Medicine, Boston University School of Medicine, 801 Massachusetts Avenue, Crosstown Bldg., Boston MA 02118. E-mail: jonathan.berz@bmc.org.

0749-3797/$36.00
http://dx.doi.org/10.1016/j.amepre.2015.07.031

Table 1. Patient Volume by Core Services 2014

	Massage	Oncology acupuncture	Staff acupuncture	Family medicine acupuncture	Group acupuncture	Integrative medicine individual consults	Integrative medicine group consults	Yoga classes
Totals	249	399	165	303	196	144	114	522

through rigorous research and dissemination, and educate the healthcare providers of tomorrow about the benefits of this model.

The Program has initiated several integrative medicine clinical services through grants and interprofessional educational partnerships with CAM schools. Integrative medicine consults, acupuncture clinics, and massage services are examples of interdisciplinary services. Patients, staff, and students have free access to yoga, meditation, Qigong, and cooking classes. The program has grown steadily in its size and patients served since its beginning; in 2014, total patient volume for all integrative medicine core services including acupuncture, massage, integrative medicine individual and group consult visits, and yoga was 2,092 visits. Table 1 provides a breakdown of delivered services. Staff providing services include five physicians, two licensed massage therapists, five licensed acupuncturists, one certified yoga instructor, two tai chi master teachers, and one speech pathologist (Table 2). All provider services are paid for either by a sliding scale fee, philanthropic donations, or via contracts with the state department of public health.

The Program is directed by a nationally known leader in integrative medicine, whose leadership activities include co-editorship of a journal on integrative medicine, Vice Chair of the Academic Consortium for Integrative Medicine and Health, and principal investigator of two NIH-funded projects on yoga for low back pain. The Program's Assistant Director is principal investigator on a Patient-Centered Outcomes Research Institute project investigating pilot integrative medicine group visits (IMGV) for patients with chronic pain and depression and an RCT of IMGV compared with standard care. Program staff members have published more than 80 articles on integrative medicine and healthcare disparities since the program began.

Throughout the program's tenure, five fellows have been mentored by integrative medicine faculty. Current fellows (one family medicine physician, one chiropractor) are participating in research projects in the following areas: Spanish IMGVs; a pilot RCT on the feasibility of implementing and evaluating in-patient massage therapy and music therapy and impact of these therapies on patient satisfaction, outcomes, and cost; and the Bravenet Patients Receiving Integrative Medicine Interventions Effectiveness Registry (PREMIER) study, which will collect satisfaction and outcomes data for patients receiving integrative medicine services across the hospital.

Graduate students in public health have served as interns in each year of the program, and many have moved into leadership roles in the field. In addition, through its partnership with a leading acupuncture college, the program has helped facilitate the training of almost 200 acupuncture interns over 10 years and almost 20 massage therapists through a multiyear relationship with a local massage school.

The integrative medicine faculty has been also been involved locally in the Boston University School of Medicine, and activities include The Healers Art curriculum, a resiliency curriculum, a medical student scholars research program, and an integrative medicine interest group.

Preventive Medicine Residency Program and Integrative Medicine Origins and Collaboration

The Boston University Residency Program in General Preventive Medicine and Public Health has been in existence since the mid-1980s and was founded by renowned preventive cardiologist Dr. Joseph Stokes, III, a co-director of the Framingham Heart Study. Since its inception, the program has placed a curricular focus on teaching skills in population health research and public health practice preparing trainees for careers in academic medicine and public health. As a result, the majority of graduates go on to careers in academic medicine or public health.

As is the case with most preventive medicine residencies nationwide, a relatively small proportion of resident time is spent performing direct patient care. Therefore, in recent years, the program has relied on a combination of funding sources including hospital monies, federal grants, and private foundations. The aforementioned Health Resources and Services Administration funding helped support the residency program as a whole and provided faculty and administrative resources that made possible the addition of a clinical rotation in integrative medicine.

The funding opportunity coincided with a residency program initiative to expand clinical preventive medicine training opportunities for all residents. Integrative medicine was identified as an ideal rotation given its

Table 2. Provider Mix in Integrative Medicine

	Provider credentials	Clinical services provided	Program role
1.	MD, MPH	Primary care, IM individual consults	Director
2.	MD, MPH	Primary care, IM individual consults	Assistant Director
3.	MD	Primary care, IM individual consults, IM group consults, IM group visits	Clinical Director
4.	MD	Primary care, group acupuncture	Family Medicine physician
5.	MD	Primary care, IM individual consults, IM group consults, IM group visits–Spanish	IM fellow
6.	EdD, MAOM, Lic.Ac.	Acupuncture (pediatrics, HIV group acupuncture)	Program director
7.	LMT	Massage (oncology, family medicine)	Clinical coordinator
8.	LMT	Massage (family medicine) Integrative medicine group visits	Contractor
9.	M.Ac., Lic.Ac.	Acupuncture (oncology, family medicine, refugee clinic)	Contractor
10.	MAOM, Lic.Ac.	Acupuncture (family medicine, HIV individual acupuncture)	Contractor
11.	PhD, MPH, Lic.Ac.	Acupuncture (HIV individual and group)	HIV services
12.	Lic.Ac.	Acupuncture (for staff)	Contractor
13.	MPH, Registered and Certified Kripalu Yoga Instructor	Yoga classes, integrative medicine group visits	Contractor
14.	Tai chi master teacher	Tai chi/qigong classes	Contractor
15.	B.Ed. Mus. MS/CCC-SLP	Buteyko breathing	Speech pathologist affiliated with the hospital
16.	Master teacher	Tai Chi/Qigong classes	Contractor

B.Ed. Mus. MS/CCC-SLP, bachelor of music education, master of sciences/certificate of clinical competence-speech-language pathologist; IM, integrative medicine; Lic.Ac., licensed acupuncturist; LMT, licensed massage therapist; MD, medical doctor; MPH, master of public health; EdD, doctor of education; MAOM, masters in acupuncture and oriental medicine; PhD, doctor of philosophy.

focus on patient-centeredness, prevention, and wellness, which were areas of clinical training that had been lacking in the residency previously. Of the 34 residents who graduated the program since 2001, only those who specifically sought out integrative medicine clinical or research training had received it; this grant made the opportunity available for all. In addition to the pre-existing primary care continuity clinic rotations and that in occupational health, the integrative medicine rotation became a third required rotation for all residents.

Because the founder of the Program, as well as other members in the Department of Family Medicine, already had collaborative relationships with a number of faculty of the preventive medicine residency program and were members of the program's executive committee, the creation of the integrative medicine experience for residents came out of a natural extension of these relationships. Faculty from General Internal Medicine/Preventive Medicine and Family Medicine/Integrative Medicine wrote the grant together with the former serving as principal investigator and the latter as co-investigators. Although there are programs that have integrated integrative medicine training in family medicine training programs, the authors are unaware of other programs in the country that have formed or elaborated on cross-departmental ties to form a program such as this in an urban underserved setting.

The goals of the collaborative program included the following:

1. increase integrative medicine knowledge among preventive medicine residents and faculty;
2. enhance skills in delivering evidence-based integrative medicine to individual patients;
3. improve resident and faculty appreciation and adherence to self-care practices;
4. increase collaborative relationships between preventive medicine physicians and integrative medicine providers; and

5. provide faculty development in integrative medicine for preventive medicine faculty.

Rotation in Integrative Medicine

Residents are required to complete a clinical practicum in the Integrative Medicine clinic for 4 hours per week, lasting 8–12 weeks. The practicum takes place in the Integrative Medicine clinic located within Family Medicine's outpatient clinic at BMC, and the focus is to provide a clinical setting for preventive medicine residents to apply integrative medicine principles to the care of patients in clinical encounters. The teaching objectives for this rotation are based on integrative preventive medicine residency competencies[5] and include

1. referring and collaborating with CAM providers (e.g., acupuncturists, massage therapists);
2. developing a patient-centered integrative assessment and plan;
3. counseling patients on the use or avoidance of CAM therapies; and
4. teaching stress management techniques.

Prior to the start of the rotation, residents meet individually with integrative faculty to review learning objectives and skill requirements and are oriented to online resources and cases. Each resident's learning goals and interest areas are identified and outside reading resources are suggested. The primary method for gaining clinical skills is by attending the integrative medicine consult clinic and group visit sessions. Residents begin the rotation by shadowing during the first week and then quickly move into the role of performing the clinical visits under direct supervision. A checklist is given to each resident to track progress through the rotation and document completion of each learning objective, and in-person feedback is given at the end of each clinical session.

Integrative Medicine Clinical Practicum: Consults

The integrative medicine consult visit consists of 1 hour–long individual visits and 30-minute follow-up visits provided by trained integrative medicine faculty physicians. The consulting patients are predominantly low-income minority patients with multiple complex medical and psychosocial problems and are referred by providers from BMC, affiliated health centers, and outside doctors for consultation. At each consultation, the physician assesses the patient using integrative medicine principles. A typical integrative medicine history expands upon the conventional medical history to include identification of patient preferences, values, and goals; previous use and interest in complementary therapies and lifestyle approaches; occupational, nutrition, exercise, and sleep histories; relationships and social networks; stressors and stress management practices; and religion and spirituality. An integrative medicine plan is developed in collaboration with the patient using the techniques of motivational interviewing. Integrative plans may include referrals to BMC or community CAM practitioners who practice a variety of evidence-based integrative therapies, including osteopathic manipulation, acupuncture, massage, and mind–body techniques (e.g., yoga, tai chi, and meditation). Lifestyle counseling is also common and includes nutrition (e.g., anti-inflammatory diet, elimination diets, Dietary Approaches to Stop Hypertension diet), exercise, and stress reduction. A compact disc audio recording of three stress management exercises (deep breathing, progressive muscle relaxation, guided imagery) has been recorded by the integrative medicine faculty and is distributed to patients as appropriate. Resources and mind–body recordings are also available on a patient webpage. Residents learn how to access evidence-based information resources regarding CAM at the point of care.

Integrative Medicine Group Visits

Group medical visits have been a clinical innovation at BMC in the care of patients with chronic medical conditions. The theory underlying group medical visits is the incorporation of patient's self-efficacy in managing medical problems together with their care team, and the patient's community of support in integrating medical recommendations into their daily life.[1] Group medical visits are being used for an increasing number of chronic illnesses, including symptom management and behavioral health issues.[1,6,7]

The IMGV is a patient-centered model of care that brings together medical group visits, integrative medicine, and mindfulness-based stress reduction.[8–14] The development of IMGV curriculum has been addressed extensively elsewhere.[15] IMGV groups meet weekly, for 8–9 weeks, to engage patients in mindfulness, self-management skills, facilitated discussions on medical topics, and exposure to evidence-based CAM. The clinical provider/facilitator and patient, using shared decision-making techniques and motivational interviewing methods, together discuss the individual strategies that will work for the patient's needs to achieve the best possible outcomes.

Incorporation of Preventive Medicine Residents Into Integrative Medicine Group Visits

During the course of the Health Resources and Services Administration grant, IMGVs occurred at BMC's Family

Medicine Clinic. There were 8–12 patients per group, and the groups met for a total of 8–9 weeks of 2- to 2.5-hour sessions. The patients participating in the group had been referred to Integrative Medicine from either their primary care physicians or a specialist (such as a neurologist or rheumatologist) for a wide range of conditions, including chronic pain, diabetes, depression, and obesity. The groups were co-facilitated by an integrative medicine physician and a meditation instructor with training in mindfulness-based stress reduction. During the course of the preventive medicine resident rotation with Integrative Medicine, each attended the IMGV sessions both in the role of participant observer and facilitator. Each resident was encouraged to facilitate one or more of the basic "medical talks" on a subject, such as stress and its effect on the body or insomnia, and helped patients learn to collect their own vital signs. In addition, each was required to choose one or more CAM modalities such as yoga, acupuncture, or meditation that they would experience, thus gaining important first-hand knowledge that would form the basis for utilizing or referring for such therapies in future practice.

Online Curriculum on Dietary Supplements for Preventive Medicine Residents

Residents completed four online patient cases, which had been previously developed, to illustrate core concepts about dietary supplements, including

1. safety and effectiveness of the most commonly used dietary supplements;
2. cultural competency in communicating about dietary supplements and reading labels;
3. managing use of dietary supplements in a hospital setting, including medical reconciliation, ordering, and documenting in the medical record; and
4. recognizing adverse events and drug–dietary supplement interactions and reporting them appropriately.

The clinical cases provided residents with narrated didactic presentations, videos, and links to evidence-based resources. Each case also included interactive questions on knowledge, attitudes, and behavior about dietary supplements to encourage learners to reflect on the material, use suggested resources, and begin to consider changes in their professional behavior. Residents were allowed to complete the 4-hour curriculum at their own pace.

Integrative Medicine Self-Care Plan

In addition, while rotating through this rotation, preventive medicine residents were required to create a self-care plan. The integrative medicine providers would check in with them several times during their 8-week rotation, and though residents were not required to write down progress in their self-care plans, nearly all residents reported incorporating more mindfulness into their lives, cooking more whole foods at home, trying mindful eating, and bringing more exercise into their otherwise busy and stress-filled days. Again, though these data were not quantitatively measured, the authors believe strongly that these strides in education and personal health are markers of a successful program and can possibly serve as a model for future education of healthcare providers.

Evaluation, Challenges, and Future Directions of the Preventive Medicine Residency–Integrative Medicine Collaboration

There was limited qualitative feedback on the residents' experience participating in the integrative medicine seminars and clinical portion of the rotation. On the standard feedback form, all five responses indicated a rating of 8 or higher (on a 10-point scale) for each of five rated components. One comment that was recurrent across several responses was the appreciation that residents had for faculty presenting integrative medicine in an evidence-based context and recognition by the faculty that the field is being held to a scientific standard as is traditional medical practice.

There were a few challenges that may have limited the achievement of all the goals as originally set. Although residents reported overall positive feedback of the clinical rotation, they requested to spend less time shadowing and more time as active providers in the clinical aspects of the rotation and groups. This challenge was met in the latter part of the grant period by having the residents prepare and deliver some of the physician lectures to the patients in the group visits ("doc talks"), rather than having these talks always delivered by integrative medicine faculty. This provided an additional opportunity for resident learning, which was well received by the trainees.

Another challenge was faculty development for non–integrative medicine preventive medicine faculty. Whereas a program goal was to do so, organizing such a program for already busy faculty proved to be difficult and did not meaningfully occur. A retreat to a nationally known yoga center, Kripalu in Lenox MA was proposed in the grant application but was not accepted. In the future, the authors suggest incorporating such a retreat so that busy faculty can take focused time away from usual work activities to learn and experience integrative medicine in depth.

Finally, as mentioned above, though there was some qualitative feedback from preventive medicine residents

participating in the collaboration, there was inadequate collection of quantitative feedback. This was due in large part to the nature of an interdepartmental collaboration where the residents were reporting to different educators for different pieces of the program and no one educator was responsible for creating and collecting feedback. In moving forward, there were will be a centralized collection of this information which will help shape future directions of the program. A plan to hire a formal evaluator is part of a current curriculum enhancement proposal and will depend on available funding.

Conclusions

The opportunity created by the Integrative Medicine in Preventive Medicine Education grant and the subsequent interdepartmental collaboration has resulted in a required integrative medicine rotation for every preventive medicine resident in the unique setting of the urban safety net hospital. The authors expect this experience will give residents the openness to incorporate integrative medicine into a future preventive medicine practice in a variety of career settings as well as the chance to learn how to improve their own health and well-being. Creating more-robust systems for evaluation and creating time away for busy faculty so that they may learn more about the principles and practice of integrative medicine will only serve to improve this program in the future.

Publication of this article was supported by the Health Resources and Services Administration (HRSA-12-182).

The authors are grateful for the funding support from the Health Resources and Services Administration (HRSA) of the USDHHS, and their IM Program, HRSA grant IMOPH25100. This information or content and conclusions are those of the authors and should not be construed as the official position or policy of, nor should any endorsements be inferred by, HRSA, DHHS, or the U.S. Government. The authors also wish to thank Danielle Dresner and Maria Broderick for their assistance in preparing the manuscript.

No financial disclosures were reported by the authors of this paper.

References

1. Eisenstat SA, Ulman K, Siegel AL, Carlson K. Diabetes group visits: integrated medical care and behavioral support to improve diabetes care and outcomes from a primary care perspective. *Curr Diab Rep*. 2013;13(2):177–187. http://dx.doi.org/10.1007/s11892-012-0349-5.
2. Clancy DE, Brown SB, Magruder KM, Huang P. Group visits in medically and economically disadvantaged patients with type 2 diabetes and their relationships to clinical outcomes. *Top Health Inf Manage*. 2003;24(1):8–14.
3. Scott JC, Conner DA, Venohr I, et al. Effectiveness of a group outpatient visit model for chronically ill older health maintenance organization members: a 2-year randomized trial of the cooperative health care clinic. *J Am Geriatr Soc*. 2004;52(9):1463–1470. http://dx.doi.org/10.1111/j.1532-5415.2004.52408.x.
4. Coleman EA, Eilertsen TB, Kramer AM, Magid DJ, Beck A, Conner D. Reducing emergency visits in older adults with chronic illness. A randomized, controlled trial of group visits. *Eff Clin Pract*. 2001;4(2):49–57.
5. IMPriME. Integrative Medicine in Preventive Medicine Competencies. www.imprime.org/integrative-medicine-in-preventive-medicine-competencies.html. Accessed December 3, 2014.
6. Jaber R, Braksmajer A, Trilling JS. Group visits: a qualitative review of current research. *J Am Board Fam Med*. 2006;19(3):276–290. http://dx.doi.org/10.3122/jabfm.19.3.276.
7. Noffsinger EB, Scott JC. Understanding today's group visit models. *Group Pract J*. 2000;48(2):46–58.
8. Vickers AJ, Cronin AM, Maschino AC, et al. Acupuncture for chronic pain: individual patient data meta-analysis. *Arch Intern Med*. 2012;172(19):1444–1453. http://dx.doi.org/10.1001/archinternmed.2012.3654.
9. Niazi AK, Niazi SK. Mindfulness-based stress reduction: a non-pharmacological approach for chronic illnesses. *North Am J Med Sci*. 2011;3(1):20–23. http://dx.doi.org/10.4297/najms.2011.320.
10. Cramer H, Lauche R, Paul A, Dobos G. Mindfulness-based stress reduction for breast cancer—a systematic review and meta-analysis. *Curr Oncol*. 2012;19(5):e343–e352. http://dx.doi.org/10.3747/co.19.1016.
11. Cramer H, Haller H, Lauche R, Dobos G. Mindfulness-based stress reduction for low back pain. A systematic review. *BMC Complement Altern Med*. 2012;12:162. http://dx.doi.org/10.1186/1472-6882-12-162.
12. Musial F, Büssing A, Heusser P, Choi K-E, Ostermann T. Mindfulness-based stress reduction for integrative cancer care: a summary of evidence. *Forsch Komplementärmedizin*. 2011;18(4):192–202. http://dx.doi.org/10.1159/000330714.
13. Fjorback LO, Arendt M, Ornbøl E, Fink P, Walach H. Mindfulness-based stress reduction and mindfulness-based cognitive therapy: a systematic review of randomized controlled trials. *Acta Psychiatr Scand*. 2011;124(2):102–119. http://dx.doi.org/10.1111/j.1600-0447.2011.01704.x.
14. Ancoli-Israel S. The impact and prevalence of chronic insomnia and other sleep disturbances associated with chronic illness. *Am J Manag Care*. 2006;12(8)(suppl):S221–S229.
15. Gardiner P, Dresner D, Barnett KG, Sadikova E, Saper R. Medical group visits: a feasibility study to manage patients with chronic pain in an underserved urban clinic. *Glob Adv Health Med*. 2014;3(4):20–26. http://dx.doi.org/10.7453/gahmj.2014.011.