A Pilot Curriculum to Integrate Community Health Into Internal Medicine Residency Training

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Abstract

Background Public health training has become an important aspect of residency education. The Institute of Medicine recommends public health training for all resident physicians, and internal medicine educational milestones include general public health skills.

Objective We sought to integrate community health into internal medicine residency training by developing a community health elective (CHE) curriculum.

Methods We developed a 2-week CHE curriculum for internal medicine residents, featuring facilitated discussion sessions, clinical experience at health centers targeting medically underserved populations, and a culminating presentation. We evaluated our pilot curriculum using pre-elective and postelective course surveys with Likert-type questions.

Results Of 150 eligible residents, 32 (21%) enrolled in the elective. Nearly all participants (30 of 32, 94%) strongly agreed that learning about community health was an important part of their residency training. Residents' perceived competence at discharging hospital patients with follow-up at community health sites increased 13-fold after taking the elective ($P < .001$). There was no increase in reported likelihood to practice in an underserved community or in primary care.

Conclusions The CHE addresses several Accreditation Council for Graduate Medical Education competencies and internal medicine Milestones and could be a replicable model for internal medicine residency programs that seek to provide community health training.

Editor's Note: The online version of this article contains the Community Health pre-elective and postelective surveys, and 2 tables providing percentage information of participants' responses to pre-elective and postelective course survey statements.

Introduction

Public health training has become an important aspect of residency education. During the past decade, the Institute of Medicine published 4 reports highlighting the value of public health skills in all fields of medicine, including a 2012 recommendation for federal funding to develop residency-level curricula promoting integration of primary care and public health.[1–4] The Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Internal Medicine recently established Milestones for internal medicine (IM) residency training, which include several public health skills (BOX 1).[5] The program requirements for family medicine[6] and pediatrics[7] also require training in community health. The internal medicine standards require that residents demonstrate general knowledge of "epidemiological and social-behavioral sciences," but they do not further delineate training in specific public health fields.[8] In 2003, the Association of American Medical Colleges and the Centers for Disease Control and Prevention jointly funded a grant to advance public health education for residents in several specialties.[9] The literature includes curricula focused on health systems,[10] practicum projects with local health departments,[11] and health policy,[12] but no formal review of public health training opportunities in IM residencies exists. Most programs include health systems and/or policy in their core curricula, but few provide community health instruction (unpublished data). We found 2 examples of brief community health curricula for IM residents in the literature.[13,14] One was not feasible for our study site, given

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BOX 1 Internal Medicine Milestones[5] Pertinent to a Community Health Curriculum

Patient Care (PC)	Develops customized, prioritized care plans for the most complex patients, incorporating diagnostic uncertainty and cost-effectiveness principles (PC2)
Medical Knowledge (MK)	Possesses the scientific, socioeconomic, and behavioral knowledge required to successfully diagnose and treat medically uncommon, ambiguous, and complex conditions (MK1)
	Understands the concepts of pretest probability and test performance characteristics (MK2)
Practice-Based Learning and Improvement (PBLI)	Uses common principles and techniques of quality improvement to continuously improve care for a panel of patients (PBLI2)
	Is able to lead a quality improvement project (PBLI2)
Interpersonal and Communication Skills (ICS)	Models cross-cultural communication and establishes therapeutic relationships with persons of diverse socioeconomic backgrounds (ICS1)
Professionalism (PROF)	Role models consistent respect for patient's unique characteristics and needs (PROF3)
Systems-Based Practice (SBP)	Teaches patients and health care team members to recognize and address common barriers to cost-effective care and appropriate use of resources (SBP3)
	Actively participates in initiatives and care-delivery models designed to overcome or mitigate barriers to cost-effective, high-quality care (SBP3)

its length (4 weeks divided over 2 years tied to ambulatory rotations) and dependence on a partnership with a community organization,[13] and the other was too brief, consisting of 4 afternoon sessions.[14]

Explicit institutional commitments to educate physicians for careers meeting community needs have long-term effects on graduate career selection.[15] Creating longitudinal, integrated community health training would require substantial changes to existing IM residency programs. For many programs, offering a brief course is more feasible. In 2009, we designed a 2-week community health elective (CHE) for IM residents with the goals of providing outpatient clinical training in underserved communities in Washington, DC; improving resident familiarity with community resources and local demographics; improving resident comfort in discharging patients with community follow-up; and encouraging careers in medically underserved communities and primary care.

Methods

Setting

The George Washington University (GWU) includes schools of medicine and public health, an academic tertiary care hospital, and multi-specialty outpatient offices. The GWU's IM residency program has 75 categorical residents and 15 primary care residents. Categorical residents' outpatient training is a weekly continuity clinic at the academic center, caring for insured patients with a wide range of demographic characteristics. Although Washington, DC, has an extensive system of community health centers, categorical residents do not routinely train at those sites. Scheduled elective time increases throughout residency. Primary care residents have 12 consecutive months of outpatient rotations at the academic center and 1 morning per week at a local free clinic.

Community Health Curriculum

Each morning, volunteer guest lecturers led two 75-minute sessions in 3 key areas: foundational knowledge (eg, health disparities), career development (eg, physician recruitment programs), and health needs of vulnerable communities (eg, homeless health). BOX 2 lists the topics covered. Lecturers included GWU and community physicians, GWU faculty, and governmental employees and local health advocates. They received no added training but were given feedback forms completed by participants after each session.

We contacted 13 local health centers focused on medically underserved communities (eg, community health centers, health department clinics), 10 of which (77%) agreed to participate. Three (23%) declined, citing time, lack of structure for resident education, and all-volunteer physician structure. Preceptors received course objectives and could apply for voluntary clinical faculty appointments with access to the GWU library. Preceptors had 5 to 30 years of clinical experience, and most had preceptor (students or residents) experience. No further training was provided. Each resident worked at 1 site for 6 afternoon sessions and maintained a GWU continuity clinic 1 afternoon per week. On behalf of the Graduate Medical Education office, GWU's IM residency program executed written educational agreements with each clinical site. The GWU paid resident salaries and/or fringe benefits during the CHE, meeting the requirements for an allowable payment from Medicare.

At the end of the CHE, residents delivered presentations on the scope of services provided by their clinical sites and

BOX 2 **Sample, Facilitated Discussion Topics in the Community Health Elective**

Foundational Knowledge
Demographics and epidemiology of Washington, DC
Infrastructure of our local health and public health systems
Federal public health agencies
Federally qualified health centers (FQHCs)
Social determinants of health
Principles of community-oriented primary care (COPC)
Cross-cultural communication
Health disparities
Advocacy in the community
Rural health practice
Career Development
Federal physician recruitment programs and loan repayment
Management of a community health center
Each guest lecturer briefly discusses his/her own career path
Health Needs of Particular Underserved Communities
Homeless
Asylum-seekers
Prisoners
Adolescents
Homebound
Lesbian, gay, bisexual, or transgendered
Injection drug users

on ways to improve care for patients seen jointly with GWU.

Evaluation

The elective was offered twice per year for 3 years. Categorical and primary care residents voluntarily signed up for the elective. We evaluated the CHE using anonymous precourse and postcourse surveys. Four-point Likert-scale questions assessed the likelihood of the residents' practicing primary care or practicing within underserved communities, perceived competency at discharging inpatients with community-based follow-up, and whether the elective was an important part of residency training (survey provided as online supplemental material).

We calculated the percentage of all participants and the subset of categorical residents giving each response. Significance testing between baseline and postcourse responses was performed using sign tests (Quick Calcs, GraphPad Inc, San Diego, CA).

This research met the federal requirements for Institutional Review Board exemption.

Results

Of 150 eligible residents, 32 (21%) took the elective. Most (69%, 22 of 32) were in their final year of training, and most (88%, 28 of 32) were women. At baseline, 75% (24 of 32) of participants agreed or strongly agreed that they were likely to practice in an underserved community. Among categorical residents, 62% (20 of 32) disagreed or strongly disagreed at baseline that they were likely to practice primary care.

Nearly all participants (94%, 30 of 32) strongly agreed that learning about community health was an important part of their residency training. The largest impact of the CHE was on perceived competence to discharge inpatients with community-based follow-up (increased 13-fold, $P < .001$). There was no increase in perceived likelihood to practice primary care or practice within underserved communities.

Discussion

The CHE represents 1 model that residency programs can use to meet several ACGME milestones and competencies while responding to recommendations for increased public health training. Although the elective did not increase perceived likelihood to practice primary care or to practice in underserved community settings, residents reported that this elective was an important training experience. After completing the CHE, residents demonstrated markedly increased confidence in discharging inpatients with community-based follow-up, an important skill for the increasing number of residents choosing hospitalist medicine careers.

The CHE provided an opportunity to build partnerships with community-based physicians. Many physicians were excited to train residents and were incentivized by voluntary clinical faculty appointments and access to libraries. Creating the CHE also required forging partnerships with multidisciplinary faculty and local health officials. Although we benefitted from the GWU's public health school and location in the nation's capital, programs elsewhere may look to local departments of health, local Health Resources and Services Administration program representatives, and advocacy organizations.

Limitations of this study include the small number of participants, unavoidable selection bias because participation was elective, and the lack of a previously validated survey tool. We collected only self-reported (Kirkpatrick level 1)[16] outcomes and did not study sustainability of

results. The elective's short time frame and high number of postgraduate year-3 residents likely decreased its potential impact on career decisions. The lack of prior community-based training offered at GWU suggests that our residency program should not oversample for residents with an interest in community health compared with IM residents generally, so these results may be generalizable. Limited administrative support and faculty time were the main barriers to implementation; we recommend that programs that adopt this model obtain at least 40 hours of administrative assistance per CHE round.

Conclusion

Our community health elective offers a replicable model for IM residency programs that seek to provide community health training. Although the elective did not affect career plans, participants reported high satisfaction with the CHE and called it an important part of residency training. The GWU will continue to offer the CHE and has used this pilot curriculum as a springboard to develop intensive, longitudinal training in public health for select IM residents.

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