Addressing the Health Needs of the Underserved: A National Faculty Development Program

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Abstract

The authors developed a three-week faculty development program, "Addressing the Health Needs of the Underserved" (funded by Title VII), and later incorporated a yearlong Fellowship in Underserved Medicine. This article describes these programs from 1999 to 2007, focusing on participants, curricula, outcomes, and potential impact.

Participants (n = 107) in the three-week faculty development program came from 29 states and Puerto Rico, with more than 25% from underrepresented minorities in the health professions. The program focused on three skill sets: creating and sustaining community programs and partnerships; core faculty development/academic skills; and personal and professional renewal. Outcomes measured with follow-up surveys and interviews in 2003 revealed that since their participation, the first 53 participants to complete the program had created 30 new or modified residency curricula, 19 new student curricula, and 7 new student-run free clinic projects. Pre-post measures from 2003 to 2007 identified an overall 46% increase in skill confidence, with the greatest increase reported for designing a *promotora* (community lay health promoter) program. Participants expressed particular satisfaction with becoming part of a national community of scholars in the field of underserved medicine.

For the yearlong, on-site Fellowship in Underserved Medicine, four of the first six fellows who completed the fellowship were former University of California–San Diego Student-Run Free Clinic Project student leaders who left San Diego to complete family medicine residency and returned to complete the fellowship. All six currently work with underserved communities as their primary focus, five in the United States and one internationally with Doctors Without Borders.

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Forty-seven million people in the United States are without health insurance,[1] and 108 million are without dental care.[2] Together, these statistics signify a crisis in access to comprehensive medical and dental care in the United States, the resolution of which will require long-term health policy changes as well as investment in developing a cadre of clinicians who can effectively serve vulnerable populations; clinicians who are humanistic, empowering, patient centered, and community oriented; and clinicians with the skills to facilitate a health care team. The faculty who train these clinicians must also have the knowledge, skills,[3] and commitment to be role models in the field of underserved medicine. The Advisory Committee on Training in Primary Care Medicine and Dentistry's sixth report[4] focuses on the need to create new curricula and training programs for students, residents, and especially faculty on the care of vulnerable and disadvantaged populations. In addition, there is a societal need for faculty in health professions who are members of underrepresented minorities in the health professions.[5,6]

In an effort to help medical students retain their original motivations for careers in medicine and to enable them to learn new skills, a group of faculty, students, and community partners cofounded the University of California–San Diego (UCSD) Student-Run Free Clinic Project in 1997.[7] Early in this initiative, a cofounder and faculty leader in serving the underserved (E.B.) envisioned that if students and faculty could come together to launch a project such as the UCSD Student-Run Free Clinic Project, there must be interest and expertise among faculty around the country who had encountered similar and different obstacles as they worked to serve underserved communities. Faculty working to serve the underserved may have encountered barriers such as limited program development skills and funding, institutional and academic barriers, limited mentorship in partnership building and academic trajectory, and few opportunities for personal and professional renewal.

The UCSD faculty development program, "Addressing the Health Needs of the Underserved,"[8] grew out of this vision. From its inception in 1999, there have been two related goals: (1) to build a national community of scholars who are passionate about underserved medicine, and (2) to provide them with three skill sets: (a) building and maintaining effective community partnerships, (b) developing, implementing, and

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evaluating community and academic curricula and programs addressing the needs of the underserved, and (c) providing skills for personal and professional renewal.

Our training opportunities came to fruition through Title VII funding, enacted through the Federal Public Health Service Act. The act was passed in 1966 to modernize the U.S. hospital system and was amended in 1992 to include Section 747, which supported the education and training of primary care physicians, dentists, and physician assistants to serve in underserved communities.[9] In 2002, Title VII was evaluated by Fryer and colleagues,[10] who found evidence for the program's effectiveness in addressing U.S. physician workforce and policy issues. With Title VII funding, one author (E.B.) had previously codirected a longitudinal faculty development program for family medicine faculty in San Diego. This series of 24 weekly sessions during a six-month period had been well received, and participants had noted prepost improvements in learning objectives. Incorporating some of the successful elements of this local initiative, we developed a faculty development program which addressed health professions training to meet the needs of the underserved.

Since 1999, with Title VII, Section 747 grant funding, the UCSD Department of Family and Preventive Medicine has offered a three-week faculty development program, Addressing the Health Needs of the Underserved, to applicants across the country. A yearlong Fellowship in Underserved Medicine was added in 2003. This article describes these two programs: their participants, curricula, outcomes, and potential impact on vulnerable populations.

Participants

To date, the three-week faculty development program has been offered eight times—once each year from 1999 to 2007. Faculty participants attend three, five-day sessions during a six-month period. Applicants complete an application form that includes their background, expressed interests, and learning goals. In 1999, 45 applicants applied for the first year of the program, and we received a total of 98 applications during the first three years. Our goal in selecting participants was to create a diverse group of learners based on the characteristics of home state, region, university, years since completion of training, amount of faculty experience, work role, type of trainee taught (residents, students), and urban/rural practice setting. After reviewing the applications, we selected 24 participants for the first group in 1999. In retrospect, a group of that size for this type of program proved unwieldy. Over the years, a group size of 10 to 15 participants has been ideal, ensuring ease of transportation, organization, and group interaction but still having sufficient diversity and opportunity for community building.

To date, 107 participants have completed the program. Participants have come from 29 states (including Hawaii) and Puerto Rico, and nearly one third[29] were underrepresented minorities working in the health professions. Age at program entry ranged from 27 to 70 years, with the median age between 40 and 49. Sixty-three (59%) were female family medicine faculty, in part reflecting the early marketing of the program to members of the Society of Teachers of Family Medicine (STFM) and to Health Resources and Services Administration (HRSA) funding guidelines (detailed below). In 2003, a successful collaborative grant proposal allowed funding to be expanded to include internal medicine and pediatrics participants as well. The faculty participants have filled a variety of roles at their institutions, including predoctoral director, clerkship director, residency program director, and director of faculty development, as well as CEO or medical director of a community health center (CHC). In 2005, three participants were assistant deans in their respective universities, and two of the three had been tasked with developing curricula related to underserved medicine. Many participants were responsible for the community medicine component of their institution's residency or medical student program. The program has also attracted a dean of a dental school, one pharmacy faculty, and two medical educators, both with doctorate degrees, as well as five military family medicine faculty.

The one- to two-year on-site postresidency Fellowship in Underserved Medicine has recruited six participants since its inception in 2003. All six had completed residencies in family medicine. Four had been dedicated medical student leaders at the UCSD Student-Run Free Clinic Project and had then left to complete family medicine residencies elsewhere, but returned to serve as Fellows in Underserved Medicine.

Participant Recruitment

Initial funding for the national faculty development program was for family medicine faculty. To spread awareness about our new program in 1999, a brochure was developed and was distributed to several national physician groups that had high numbers of family physician faculty and/or physicians working with underserved communities. These organizations included STFM, Homeless Clinicians Network, Migrant Workers Clinicians Network, Association of Clinicians with the Underserved, and medical directors of CHCs. A letter was also sent to all department chairs of family medicine asking them to distribute the brochures and recommend the program to an appropriate faculty member. Local programs, including the Camp Pendleton Family Medicine Residency, Scripps Chula Vista San Ysidro Family Medicine Residency, and the UCSD Division of Family Medicine, were invited to send participants. These local programs had sent faculty to the original local faculty development program and had had favorable experiences.

Several years later, when funding was received to expand the program to include other primary care disciplines, our recruitment efforts expanded to include other organizations, such as the Society of General Internal Medicine and the Ambulatory Pediatrics Association. Applicants were also referred by word of mouth. Certain department chairs, aware of the program, sent more than one faculty member to the program over the years. Previous participants, as they were promoted and became directors, sent new junior faculty. For example, a faculty participant from our first program in 1999 returned to his medical school after the first of the three weeks and, with a group of motivated students, began a student-run free clinic project. During the third week, he described a particularly inspiring student leader who had

cofounded this student-run free clinic project. In 2007, that student, now a family medicine faculty member in another state, participated in the faculty development program.

Program Faculty

Instructors for the Addressing the Health Needs of the Underserved program consisted of both core faculty and guest faculty. Core faculty participated in all three weeklong sessions; guest faculty gave one or two presentations during the three weeks. There were five core faculty, all based in San Diego and funded through HRSA funding for their participation in the program: the course director, who is a physician with extensive experience in underserved medicine and medical education (E.B.); a psychologist who is an expert in group facilitation and organizational change (S.G.); an epidemiologist with expertise in culturally sensitive community-based needs and capacity assessment and program evaluation (M.L.Z.); a physician expert in community advocacy, occupational health, and environmental justice (R.H.); and a program evaluator (D.W.). Guest speakers represent a spectrum of delivery sites and special populations served and have included the director of a minority health access coalition, a family physician researcher with expertise in outcomes measurement, a family physician leader in community-based research with the homeless, a director of a residency focused on working with the underserved, a Montessori educator who had helped us create a school-based free clinic site, a reverend emeritus with extensive experience in both inner-city health care partnerships and the civil rights movement, *promotoras* (community lay health workers), a psychologist working with women and children in prisons, a community orthodontist and volunteer at the UCSD Free Dental Clinic Project, an inner-city elementary school principal, and the CEO of UCSD Medical Center.

Both core and guest faculty are available to participants during and after program participation to offer individual guidance, review grant proposals and articles, suggest and provide other forms of support, and help establish connections and identify resources in the participants' home communities. Administrative details, including scheduling and compensating instructors, arranging lodging and transportation, securing meeting space, and following up with participants, are handled by an experienced program assistant, who is funded through Title VII HRSA funding.

Curriculum for Addressing the Health Needs of the Underserved

The three-week faculty development program is based on an adult experiential learning model[11,12] and the service learning model.[13] Drawing from these models, critical and integral elements of our program are that it is learner centered, humanistic, practical, hands-on, participatory, relevant to the learner's environment,[11,12] and self-reflective.[13] The curriculum addresses both cognitive and noncognitive factors.[14] In addition, as part of the training, the Community-Oriented Primary Care (COPC) model is presented to participants as a tool for project development.[15] A core teaching strategy incorporates a brief presentation on principles and skills followed by a group experiential learning task that simultaneously addresses the general needs of the group and the specific needs of a faculty participant and requires application of principles previously learned. Sessions on designing a curriculum, program evaluation, grant writing, and developing a scholarly project incorporate this teaching strategy.

Weekly schedule and examples of key sessions

The three-week program consists of three, five-day sessions in a six-month period. After completing the program, participants have the opportunity to return for a follow-up week, the Advanced Skills Workshop, in which participants share ongoing projects and challenges and continue to function as a faculty learning community.

Table 1 provides an overview of curriculum components. The curriculum has remained consistent during the eight years of the program, with minor changes based on participant feedback and availability of presenters. In 2007, the eighth year, Title VII funding cutbacks necessitated that the program be decreased to two weeks. Each week is composed of academic core topics or skills, site visits, and reflective/renewal skills sessions. Handouts of readings relevant to each curriculum topic are provided. The teaching sessions for weeks one to three are described in this section.

Week one. A Community as Teacher session during the first week includes a panel of community member health promoters who speak about their personal and professional experiences. The second day of the course begins with a presentation on community needs and capacity assessment, followed by a drive around the neighborhood of one of the UCSD Student-Run Free Clinic Project sites. One of the site's *promotoras* serves as a guide for the tour of the neighborhood. Participants then visit a site of the free clinic project, Baker Elementary School, which provides an opportunity for the participants to meet with health professional students, teachers, the school principal, and elementary school students enrolled in the prehealth professional program. Lunch that day is provided either from the school cafeteria or prepared by and eaten together with the Women's Support and Handicraft group (called *Esperanza y Socorro*) of the free clinic project.

Week two. The second week of the course includes one day dedicated to addressing issues of culture and race, with three core elements. The session begins with the first element, which is a process of reflection and sharing personal experiences of prejudice. Its design is based on the premise that most people have been recipients of prejudice and at other times, perpetrators (e.g., making fun of another person in high school). Without recognizing both of these elements within each of us, change will not occur. By waiting until the second weeklong session to introduce this activity, the group has built trust, and a sense of community ensures confidentiality and mutual trust. This day continues with the second element, in which the group designs a curriculum for medical students or residents, using two adapted models for curriculum design presented the first week[12,17] as well as learning the term, "cultural humility," which, defined briefly, is a lifelong process of self-reflection, the redressing of power imbalances in the patient–physician relationship, and developing mutually beneficial and respectful community partnerships.[18] The third element occurs

Table 1

Curricular Components of the Addressing the Health Needs of the Underserved Faculty Development Program, University of California–San Diego, 1999–2006

Week	Core sessions	Site visits	Reflection and renewal
One	1. Community as Teacher (panel of community members/health promoters) 2. Designing and Implementing a Needs and Capacity Assessment 3. Introduction to Developing a Scholarly Project: Community-Based Participatory Research with the Homeless 4. Designing a Course or Curriculum 5. Designing a Community Medicine Residency Rotation 6. Teaching Occupational and Environmental Health Issues	1. Community tour and drive around (area around inner-city elementary school) 2. Inner-city elementary school/Student-Run Free Clinic Project 3. Shipyard	1. Introductions 2. Goal setting 3. Sharing of inspirational quotes, poetry (check-in/learning circle) 4. Designing/selecting learning contract/ project
Two	1. Community Organizing: Developing a *Promotora* Model 2. Addressing Issues of Culture and Race (reflection activity, curriculum design, and audiovisual media teaching tools session) 3. Teaching Oral Health to Medical Students and Residents 4. Working with Women/Children in Prisons 5. Developing Community Programs (this session is offered by former program participants so that current participants will see themselves as part of a larger learning community)	1. Downtown church—transdisciplinary community partnership (dental, acupuncture, pharmacy, legal), including visit to Student-Run Free Clinic Project 2. Community-based environmental advocacy program 3. Mural park (Chicano park with history/ tour of murals by one of the artists)	1. Check-in/learning circle (ongoing) 2. Collage (goal setting): Past, present, future, hopes, challenges, and dreams for self and the world 3. Presenting plans for earning contracts/ projects (to be presented in week three)
Three	1. Fundraising/Grant Writing 2. Scholarly Skill II: Developing a Basic Community-Based and/or Educational Research Proposal 3. Participant Presentations (two models) 4. Teaching Advocacy/Policy Issues	1. Tijuana, Baja California, Mexico, Border Health Issues, includes: • Shelter for migrants and people recently deported from the United States • Border fence • Clinic (nongovernmental organization focused on health promotion and care of the poor) • Women's Empowerment Program/small businesses/home visit • Community environmental advocacy group/abandoned factory (waste site)	1. Check-in/learning circle: Putting Ourselves in the Shoes of the Learner 2. Symbolic artwork (making a talisman) and shared reflection activity 3. Going home: Reflections on future plans, goals, and shared learning

in the evening, when each participant is expected to bring an element of media (e.g., an audio or video clip, scene from a film, or poem or visual image), which they briefly present followed by a discussion on how it can be used in teaching issues related to culture and race. The second week also requires each participant to present a planned project or learning contract that he or she will then develop before arriving for the third and last weeklong session. The second week of the program overlaps with the four-day Advanced Skills Workshop for former program participants to meet current participants and have a shared learning experience.

Week three. During the third week of the program, each participant gives a presentation. Participants have a choice between presenting a project addressing needs of the underserved or presenting a current challenge or question the participant is addressing in their work using a "case presentation" model. After a brief presentation and a focused question by the presenter, participants brainstorm possible solutions, then the presenter summarizes the discussion into three learnings or next steps. At the end of the week, participants review next steps and opportunities for continued networking and mutual learning. A group dinner with distribution of plaques and certificates reflecting course completion and CME credit concludes the program.

Program learning environment

Learning takes place in an informal, supportive environment in an affordable, off-campus, retreat-type setting, allowing for participants to relax and focus on learning, skills acquisition, and reflection. Personal and professional renewal is addressed in several ways, including regular opportunities for group reflection and "check-in." During each week, one session is devoted to personal and professional renewal, incorporating elements of art, self-knowledge, and community building. These sessions address noncognitive skills[14] and integrate tools, such as goal setting, reflections on inspirational quotes, and constructing a personal life collage addressing past, present, and future hopes and dreams, both for oneself and the world.

Curriculum of the Fellowship in Underserved Medicine

In 2003, one of the faculty development program cofounders (E.B.) created a full-time Fellowship in Underserved Medicine based at UCSD, designed for primary care physicians who, on completion of their residency training, wanted to devote their careers to

underserved medicine. The decision to start the yearlong, on-site Fellowship in Underserved Medicine evolved out of the experience of the medical student leaders of the UCSD Student-Run Free Clinic Project. By 2003, former medical students who had been volunteering at the Free Clinic Project since its inception in 1997 were completing their family medicine residencies and expressing interest in pursuing underserved medicine. Similarly, three successful years of the faculty development program had been completed, and it was clear that there were faculty passionate about working with the underserved and who had the desire to increase their skills in teaching program design and community partnerships in underserved health care. The interest and the passion were there, but there seemed to be a gap after residency training for young health professionals interested in devoting their careers to underserved/health care—especially for those interested in faculty positions. It also seemed that some of these young physicians were starting in positions in CHCs and often leaving after a year or two. Others were completing residency often exhausted and disillusioned, questioning whether their dream of working and teaching with the underserved could become a reality.

Creating the Fellowship in Underserved Medicine, with additional HRSA Title VII funding, addressed the gap, so that a student interested in underserved medicine could work at the free clinic project as an undergraduate or medical student, train in primary care residency with an underserved focus, then complete the Fellowship in Underserved Medicine to embark on a career in academic medicine or medical education with a focus in underserved medicine. The fellowship was designed on the premise that underserved health care, like any other medical field, has a specific knowledge base, a specific skill set, and patient populations with unique needs. Providing a clear, structured path to the practice of underserved health care, which includes training in core skills, gaining knowledge of the health and well-being needs of underserved populations, and becoming part of a learning community, might lead to increased retention and longevity in the field, improved quality of life for the health professional, and the opportunity to become a leader in the field.

The fellowship addresses the need for experienced, knowledgeable physicians in the practice of underserved medicine. Participants have the choice of pursuing either a teaching and leadership focus that includes training, experience, and supervision in curriculum and program design and implementation, classroom and clinical teaching, leadership and management of the UCSD Student-Run Free Clinic Project, and completion of a specific project, or an academic focus that includes completion of a masters in public health or a newly developed track in Health Policy in Underserved Health Care in the UCSD Masters in Health Care Leadership program.

All fellows complete the three-week Addressing the Health Needs of the Underserved program as core curricular content for the fellowship. Fellows in the education/leadership track meet weekly with the fellowship director and other fellows and junior faculty to address learning and programmatic content and challenges. Fellows' projects have included Developing a Street Medicine Component for the Free Clinic Project, Developing a Border Health Policy Curriculum, Management Skills in Free Clinic Project Leadership, an MPH program/project in Shared Decision Making, and an Art Health/Community Mural/Women's Empowerment Project. A new track in Underserved Health Policy in the UCSD Masters in Administrative Studies in Executive Health Care Leadership grew out of the project of one of the fellows.

Outcomes

The national, three-week Addressing the Health Needs of the Underserved faculty development program has been evaluated in two parts. After the first three years of the program, a follow-up questionnaire was administered by paper and/or phone interview to 50 of the first 53 participants. For the subsequent five years, participants completed a pre and post questionnaire at the beginning of the first week and at the end of the third week of the program. Complete data are available from 40 of the 50 faculty who participated from 2003 to 2007.

Outcomes 1999–2001

The 50 faculty who participated in the first three years of the program included 16 underrepresented minorities, of whom 9 were African American and 6 Hispanic. Overall, 29 respondents (58%) indicated that they worked more than 50% of the time with the underserved. Eighteen of the first 53 participants availed themselves of small amounts of HRSA grant funding after the three-week program and were able to complete or continue projects at home. Among respondents, 26 (52%) indicated that their time working with the underserved had increased during the last year or two (since participating in the program).

Nineteen respondents (38%) reported that they had created new curricula for medical students, including an elective on homeless health care, an elective focused on the underserved, and a COPC program. Thirty participants (60%) indicated they had created new curricula for residents, including a rural community medicine rotation, and 29 participants (58%) had created or modified a community medicine rotation.

In terms of research and program development, 21 participants (42%) reported being the principal investigator or coinvestigator for a new grant after their participation in the faculty development program. Of these 21 grants, 11 had been approved and 6 were pending. Grants received by former participants included HRSA grants as well as foundation grants. Thirteen (26%) former participants had written or submitted a publication, and seven of these had been accepted. Published titles included "Latino women and HIV/AIDS: Risk factors and lifetime partners by ethnic subgroup," "Service learning: Changing the culture of the academic medicine center," and "Outcomes of diabetes care by community-based family physicians, a border health model." Twenty-one participants (42%) had presented or submitted presentations on topics such as Assisting Torture Victims, and A Model Disease Prevention Program in an African-American Community at regional or national meetings.

Thirty-five previous participants (70%) had taken on new leadership roles since the program, including residency director, medical director, community health center, associate program director, associate medical director for health care

for the homeless, coordinator of the community medicine rotation, and member of steering committee, health disparities collaborative, bureau of primary care. Of the participants, 13 (26%) had become directors of programs since participating in the faculty development program. Of note, 47 respondents (94%) felt the program had helped them learn to build community.

Table 2 summarizes skill improvements and program achievements reported by participants on their follow-up questionnaires. Although improvement was reported for all skills, the greatest improvements were reported for teaching skills, working with community partners, developing community-oriented curricula or programs, and cultural competency (all means >4.0, scale of one to five, with one = not at all to five = a great deal). In terms of program achievements, inspiration to continue working with underserved communities ranked the highest (mean = 4.53).

When asked about the benefit of participating in this faculty development program, participants responded quite favorably. "Without this fellowship, I doubt I would have pursued a career in serving the underserved," one participant acknowledged, while another noted, "I believe it saved me at least five years in gaining a working knowledge of this area." Beyond providing participants the tools to pursue careers in serving the underserved, participants appreciated that the format "created a learning community." In fact, the program offered many new perspectives: "It opened up a whole new world to me—in terms of clinical research, work with underserved, presentations skills, and applicable knowledge." Benefits to participants seem to be widespread and long lasting. As one participant stated, "I believe that participation in this fellowship will lead to significant changes in career orientation as well as job and personal satisfaction instead of bitterness towards this profession."

When asked to give an example of how this program specifically benefited them, one participant responded, "I have always wanted to start a free clinic for underserved persons; seeing the free clinic at UCSD helped me see how I could fulfill that dream." Another noted, "As part of the program, I started and completed, in May 2001, my MPH in health services administration."

When asked what was the impact of becoming part of a learning community through this faculty development program, one respondent stated, "Inspiration to keep going, create more programs, take care of patients, do good teaching, learn more about my community and find local partners to share the work and offer better services to our patients." Another participant responded, "I have been more active in academics and more likely to publish, present and go to national meetings."

Outcomes 2003–2007

Table 3 summarizes changes in reported confidence in relevant skills from the beginning of the first week of the faculty development program to the end of the final week. The mean of all measures increased from pre to post, by 13% to 164%.

In general, those measures where the participants began with less confidence changed the most, and those measures where the participants had the most initial knowledge changed the least. The amount of change in the groups from pre to post remained quite stable from year to year (data not shown). However, the amount of change over the course period was slightly less in the eighth year of the program, which may be attributable to the decrease in time of the program from three to two weeks. Of importance, the 2007 group, whose program was reduced to two weeks, has chosen to return for an additional session to review shared projects and updates in more detail.

Overall, the groups saw themselves as having a moderate level of skill in core faculty development areas; nonetheless, these areas improved across the board. Areas of particular growth included community topics such as developing a *promotora* program, developing community-based occupational medicine experiences, and building community partnerships. Although participants saw themselves as culturally competent, there was, on average, a 55% increase in perceived ability to develop an educational component or experience

Table 2

Outcomes Reported by 50 Faculty Who Participated in the Addressing the Health Needs of the Underserved National Faculty Development Program at the University of California–San Diego, 1999–2001

Survey question	No.	Mean ranking*
To what extent do you feel the following skills improved as a result of this program?		
Teaching skills	48	4.52
Working with community partners	48	4.38
Developing community-oriented curricula or programs	47	4.23
Cultural competency	48	4.20
Curriculum development	47	4.00
Leadership skills	48	3.92
Scholarly skills	47	3.77
Program development	47	3.70
Developing occupational health/environmental medicine curricula	50	3.31
Grant writing	44	3.23
To what extent did the program achieve the following?		
Inspired me to continue my work with underserved communities	47	4.53
Gave me valuable skills and tools	48	4.35
Helped me to understand concept of community-oriented primary care	48	4.25
Helped me to focus my interest in working with the underserved	46	4.13
Helped me become a better teacher	48	4.00

* Scale of 1–5 (1 = not at all, 2 = a little, 3 = somewhat, 4 = a lot, 5 = a great deal).

Table 3

Participants' Reported Confidence in Key Areas Before and After Participation in the Addressing Health Needs of the Underserved National Faculty Development Program at the University of California–San Diego, 2003–2007*

Survey question	Pre†	Post†	% Increase
Please identify your confidence in being able to demonstrate your proficiency on a scale of one to five in the following areas:			
Designing a *Promotora* program	1.36	3.60	164
Defining *Promotora*	1.71	4.34	153
Designing an occupational and environmental health experience for students or residents	1.49	3.03	104
Designing a community-oriented primary care project or educational experience	1.92	3.70	92
Defining community-oriented primary care	2.14	3.95	84
Developing occupational/environmental medicine curricula	1.69	2.95	75
Designing a community medicine rotation	2.13	3.65	72
Designing a research proposal	1.94	3.26	68
Designing a needs assessment	2.26	3.77	66
Designing student curricula related to the underserved	2.46	3.95	60
Designing a student or resident-run free clinic project	2.27	3.63	60
Building community	2.41	3.85	60
Grant writing	2.01	3.21	60
Developing community-oriented curricula or programs	2.45	3.85	57
Developing an educational component or experience addressing issues of culture and race	2.38	3.69	55
Designing a program or course evaluation	2.49	3.79	52
Course and curriculum development and design	2.53	3.79	50
Teaching about issues of health policy	2.24	3.32	48
Developing an academic trajectory	2.26	3.28	45
Program development	2.56	3.68	44
Working with community partners	2.88	4.10	43
Teaching about issues of culture and race	2.80	3.82	36
Working with homeless people	2.79	3.77	35
Scholarly writing	2.35	3.15	34
Stress management	2.92	3.85	32
Small-group facilitation	2.91	3.70	27
Goal setting	3.18	3.94	24
Average perceived increase in skills‡	2.54	3.70	45.7

* Respondents: 13/13 in 2003, 7/10 in 2005, 8/12 in 2006, 12/14 in 2007.
† Scale of 1–5 (1 = not at all, 2 = a little, 3 = somewhat, 4 = a lot, 5 = a great deal).
‡ Based on all 35 items. Table includes those 28 items showing >20% change; seven items showing 13%–20% change not shown.

addressing issues of culture and race, and a 36% increase in ability to teach about issues of culture and race.

Outcomes of the Fellowship in Underserved Medicine

To date, six individuals have completed the one-year Fellowship in Underserved Medicine. All six currently devote their careers to underserved medicine. Four of the six were UCSD medical students who served as leaders of the Student-Run Free Clinic Project and returned to matriculate into the fellowship after completing residency training in family medicine elsewhere. Of the six, four are practicing underserved medicine in San Diego and remain involved with the free clinic project, either as salaried or voluntary faculty. Two of these four also work in a CHC; one is faculty in a family medicine residency where he teaches residents to provide care to the underserved. Of the two who are no longer in San Diego, one works for Doctors without Borders with assignments in Angola, Sudan, and Uganda; the other fellow completed an MPH and has moved into a new position in a CHC. Our first dental fellow was previously a UCSD undergraduate who spent several years as a predental volunteer at the UCSD Free Dental Clinic Project. She then completed dental school. After her graduation and licensing, she has returned to the SRFCP to be our first dental Fellow in Underserved Health Care (funded by a private foundation).

Discussion and Future Plans

It is our intention to continue measuring participant outcomes in order to understand the professional trajectories and academic and program contributions of past participants. Former participants also will be interviewed as to the usefulness of this program in building a national community of faculty interested in developing and transforming curricula, in faculty sustenance and retention, and in programmatic, community, and institutional outcomes. Student-Run Free Clinic Projects have been started or strengthened by participants from the program in settings including Jackson, Mississippi; Lexington, Kentucky; Charleston, South Carolina; Irvine, California; Houston, Texas; Kansas City, Missouri; and Mililani, Hawaii. One such participant was nominated by his students and recently named Family Physician of the Year in his state. To further assess the national impact of this program, it will also be of value to measure the impact of these programs on numbers of students and residents involved, number of patients served, and long-term impact on student career choices, their work with the underserved, and their philosophies of health care.

There are limitations in the work presented here. First, we lacked a comparison group to gauge whether faculty working in similar settings may have produced comparable program or training opportunities, published, or taken on leadership roles at a similar rate as those reported for the faculty program participants. Also, this is a self-selected group. The self-selection, however, is

mitigated by the fact that a number of the participants came at the suggestion of their department chair or dean.

Many faculty participants indicated perceived benefit from the community building and personal and professional renewal activities built into the program. We have reflected that it may be unlikely that this group of health professionals, devoted to social justice and service to the underserved, would have given themselves permission to participate in a program focused on personal and professional renewal, which is why we decided to include it as one of the foci of our program. Nonetheless, skills of stress management, achieving professional and personal balance,[20] and successfully negotiating an academic trajectory seem necessary for faculty retention and renewal. A recent article demonstrates the importance of including both cognitive and noncognitive skills in faculty development training.[14]

It has been heartening to observe the degree of value that experienced and skilled faculty participants have attributed to this faculty development program, the national community that has evolved, the subsequent creation of individual programs, and the impact of these programs on faculty, students, residents, and communities. It has been meaningful to observe the return of previous UCSD Student-Run Free Clinic Project Leaders as Fellows in Underserved Medicine. In addition, students of faculty who participated in the early years of the national three-week program have now participated in the program as faculty participants themselves.

Both the three-week program and the yearlong fellowship models may be useful as well for health professionals from other fields, including dentistry, pharmacy, nursing, law, mental health, social work, and other medical specialty fields. The UCSD Student-Run Free Clinic Project is a transdisciplinary model training for medical students, side by side with pharmacy, predental, acupuncture, social work, nurse practitioner, and law students.[7] HRSA funding guidelines, however, currently only allow for dental training grant requests from residency training programs, but not for students and faculty. HRSA funding and guidelines could expand to include students and faculty from schools of dentistry. Similarly, there are no opportunities for faculty or student training proposals from schools of pharmacy. Yet, in both of these fields, there is an unmet need for health professionals to serve underserved communities.[2]

Although HRSA currently allows for limited collaborations across primary care fields within a single institution, these guidelines could be expanded to include collaborations across health professions and health professional schools. With the assistance of a private foundation, the UCSD Fellowship in Underserved Medicine has now been expanded to be a Fellowship in Underserved Health Care, funding fellows in underserved dentistry, pharmacy, and integrative medicine. Similarly, several health professional schools with experience in the teaching and implementation of programs in underserved health care could collaborate to offer a national fellowship in underserved health care. HRSA funding could allow for collaborations across fields and/or health professional schools from different regions or states.

"Pipeline"[21] is a term often used to describe the journey of a young person, especially from an underrepresented minority and/or from a socioeconomically disadvantaged background, into the health professions, with programming and support, at each stage of training. Perhaps it is time to consider that there is also a pipeline on the other side of training, for those who choose careers to work with the underserved. Medical school, residency, fellowship, and faculty development are all key moments in this trajectory. Training must be "ergonomic" in nature, reducing stress and providing support at key junctions, to result in the outcome of a faculty member and/or clinician/teacher providing ongoing service and teaching with underserved communities. Programs must be affordable, geared to the individual's interest and level of training and experience, and create a learning community.

The yearlong fellowship has also provided us with several lessons. Key among these is that there are individuals passionate about serving and teaching with the underserved. There are specific cognitive and noncognitive skill sets that, when provided, can strengthen the individual in maintaining his or her path.[14,20] The career paths of two of our fellows are illustrative here. One, a young Latino from a border community, completed his residency in family medicine. He is now faculty, teaching in the residency where he trained, and is a clinician in a border CHC in the community in which he grew up. Ten percent of the time, he supervises students at the UCSD free clinic project, and 10% of the time, he continues to pursue his passion for health policy with the underserved by codesigning and implementing courses and teaching sessions for medical students in health policy and cultural sensitivity. Another former fellow works in a busy CHC, is part-time faculty, and devotes 10% time to supervising students at the free clinic project, and 10% time to being cofacilitator of the free clinic project women's support and handicraft group. For each of these individuals, the funded two half-days per week, one in which they are outstanding clinical role models for students in underserved medicine, and one in which they continue to pursue the academic/programmatic focus of their fellowship, nourish them and help to prevent burnout. In an ideal situation, these former fellows and others like them would have more funded time to devote to their academic pursuits.

Also, there are limited mechanisms for ongoing federal funding of proven programs. This limitation is at times detrimental to the programs. The timing of the allocation of HRSA funding, for example, presents a challenge for recruitment of fellows for one- to two-year slots. In the current three-year funding cycle, announcement of funds awarded often occurs near or after July 1, which is the traditional end date for residencies and start date for academic fellowships. This poses a challenge for ongoing fellowship programs in the first year of the three-year cycle. Potential fellows must be asked to trust or hope that funding will come through and have a backup plan if funding is not approved. National recruitment of fellows cannot realistically occur until funding is

certain. Thus, the first year of a three-year cycle may be a less successful year for recruiting fellows, which may affect the overall appearance of success of an ongoing program. HRSA guidelines might be expanded to approve a separate funding stream with a longer funding cycle (e.g., five years for programs that have demonstrated success).

But the work is not done. There are more underserved and uninsured individuals in the nation than when the program began. Funding streams have been cut. Identifying successful inspirational educational models at all training levels, learning the skills to implement, fund, measure outcomes, and sustain these programs, and building a national transdisciplinary community of faculty in underserved health care are necessary elements to the future of underserved medicine.

Focused faculty development programs and fellowships addressing the health needs of the underserved can inspire, train, and reenergize faculty while increasing the effectiveness of their skills to work with students, residents, and underserved communities and can lead to concrete change, development of lasting programs, and creation of healthy learning environments and community partnerships.

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