Development of a Residency/MPH Program

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Background and Objectives: Public health complements the care physicians provide to patients. Few residencies, with the exception of preventive medicine residencies, offer trainees the opportunity to obtain a public health degree. The University of California, San Francisco-Fresno (UCSF-Fresno) Family Practice Program and California State University-Fresno (CSU-Fresno) spearheaded the creation of a combined residency/MPH program at the UCSF-Fresno Medical Education Program. Methods: We developed a combined residency/MPH program that allows family practice residents to obtain an MPH degree during their residency training years. We describe the development process, which included initiation of the program, setting goals and objectives, identifying MPH course content and funding, and selecting applicants for entry into the program. Results: The program was successfully funded, and the course content was developed. Participant selection, registration, and enrollment procedures have now been developed. Performance standards have been established, and scheduling conflicts have been addressed. The program has thus far enrolled 29 residents and faculty. Nearly one third have dropped out of the MPH component of the program, mostly because of the workload involved in simultaneous residency and MPH training. Conclusions: Other training programs can replicate a combined residency/MPH program if a strong relationship with a nearby university offering a MPH degree can be forged. The experience at UCSF-Fresno can help guide others contemplating a combined residency/MPH program.

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The population-based approach of public health complements the care physicians provide to individual patients.\textsuperscript{1,2} Medical educators can instruct physicians in training about public health concepts in a number of ways. They can teach physicians in training about epidemiology and biostatistics, the cornerstones of public health, which are essential for understanding the medical literature. They can involve residents in community-based health interventions, such as participation in health education projects, screening activities, or community-oriented primary care, which allow physicians in training to experience the satisfaction of having an influence on the health of communities and populations in ways not possible in most purely clinical settings. Further, discussing the role of public health is an excellent way to improve understanding of public health concepts and the interplay between the care of individuals and populations.\textsuperscript{3}

Some medical students and residents desire more advanced training in public health principles, including a formal public health degree. A public health degree better prepares physicians to participate in health care careers involving administration, education, and interactions with governmental agencies. In addition, because physicians with a public health degree may be more sensitive to public health’s contributions to improved health status, they are in a better position to advocate for distribution of health care dollars into public health services; a staggering 99% of health care funding is funnelled into clinical medical services, with inflationary pressures likely to push this figure even higher.\textsuperscript{4,5}

From the University of California, San Francisco-Fresno Family Practice Residency Program.
Students may obtain a public health degree at several points in their training. Many physicians obtain their MPH degree prior to entering medical school. Several medical schools offer combined MD/MPH degrees. Others obtain MPH degrees after completing training through a variety of programs designed to accommodate practicing professionals. Weekend classes, on-job on-campus programs, and intensive 9-month programs are all available. Few residencies, however, with the exception of preventive medicine residencies, offer trainees the opportunity to obtain a public health degree during residency training. The academic phase of preventive medicine residencies does incorporate a course of study leading to an MPH or equivalent degree.\textsuperscript{7,8} There were 89 accredited preventive medicine programs in 1999.

The University of California, San Francisco-Fresno Family Practice Program spearheaded the development of a combined residency/MPH program for the University of California, San Francisco-Fresno (UCSF-Fresno) Medical Education Program to strengthen the program academically and to better address the health care needs of central California’s underserved populations. The combined residency/MPH program allows UCSF-Fresno residents in specialties other than preventive medicine to obtain an MPH during their training years. This program is described below.

Program Development

Initiation Process

The combined residency/MPH program concept was funded by a grant submitted by UCSF-Fresno to the US Bureau of Health Professions (BHPr) Partnership for Health Professions Education Program in 1996. The grant was crafted by key participants from UCSF-Fresno and California State University-Fresno (CSU-Fresno), including the UCSF-Fresno’s associate dean, the program director for family practice, and CSU-Fresno’s chair of the Department of Health Sciences. The combined residency/MPH program bridged the chasm in California’s educational system between university and state college programs. To proceed, approval was needed at the highest levels. Support for the combined residency/MPH program came from the president of CSU-Fresno and the dean of the UCSF-Fresno School of Medicine. The proposal promoted educational collaboration between UCSF-Fresno and CSU-Fresno to train residents, with the ultimate goal of improving care for underserved populations.

The grant proposal sought to address identified needs, including disparities in care for the increasing Latino population in central California, the underrepresentation of Latino physicians in the workforce, and the paucity of Latino academicians in University of California medical schools.\textsuperscript{9,10}

Goals and Objectives

The combined residency/MPH concept was intended to address each of the needs identified above. One goal of the program was to promote collaboration between local institutions of higher learning. A second goal of the program was to improve understanding of the health care needs of underserved populations. A third goal was to recruit underrepresented physicians to UCSF-Fresno and central California. A final goal was to improve the academic standing of UCSF-Fresno.

Four specific objectives for the combined residency/MPH program were established. These objectives were to (1) enroll six residents and/or faculty each year, (2) produce three studies each year addressing the health care needs of underserved populations, (3) recruit at least three underrepresented minority residents each year, and (4) have at least three manuscripts accepted to peer-reviewed journals or accepted for presentation at national meetings each year.

Applicant Selection Process

A brochure and application form were developed by the Family Practice Program in conjunction with CSU-Fresno, describing the combined residency/MPH program. The brochure provided background information, a description of each of the courses offered through CSU-Fresno, a course schedule, and an explanation of the application process. Applicants were asked why they wanted to enroll in the combined MPH program, about previous involvement in community-based research activities, and how they would use their MPH degree.

Recruitment for the first cohort of residents entering the combined residency/MPH program in 1997 occurred prior to the National Residency Matching Program (NRMP) match date. In subsequent years, residency applicants were given information regarding the combined residency/MPH program and advised that applications for the MPH component of the program and decisions regarding acceptance into the program would occur after residents had matched to their respective residency.

The applicant selection process has evolved. For the first three combined residency/MPH cohorts, the number of residents and faculty interested in the MPH program matched the six tuition scholarships available each year. For the fourth cohort (fall 2000), there were more than six resident applicants. All of those residents were accommodated.

The increased level of interest in the combined residency/MPH program and a 31% dropout rate over the 4 years of the program’s existence spurred UCSF-Fresno and the Family Practice Program to develop stricter criteria for acceptance into the combined residency/MPH program. The Family Practice Program now uses criteria that includes its rank list for the NRMP, evidence of academic difficulties in medical school.
Residency Education

Minimize costs. CSU-Fresno arranged for residency/students into regular MPH offerings.

Mainstreaming residency/MPH has absorbed the cost of providing the six core courses.

For its part, CSU-Fresno salary support for the part-time administrative coordinator, now funded at .2 FTE. For UCSF-Fresno, this has taught us that the majority prefer the 3-year option, which enables them to graduate from the residency and obtain their MPH simultaneously.

Participating residents select one of three areas of concentration: environmental and occupational health, health promotion, or health administration. All residency/MPH participants are expected to complete a field experience and a project or thesis.

Program Challenges

The establishment of a combined residency/MPH program posed many challenges for both UCSF-Fresno and CSU-Fresno. Funding and participant selection challenges are described above. Progress toward goals and objectives, registration obstacles, scheduling conflicts, establishment of performance standards, and participant attitudes are described below.

Progress Toward Goals and Objectives

Evaluation of the combined residency/MPH program’s ability to achieve its goals and objectives is ongoing. The limited number of graduates to date limits its analysis. However, progress toward meeting enrollment objectives is reviewed below.

Enroll Six Residents and/or Faculty Each Year. Each year, at least six residents or faculty have enrolled (seven in Cohort One, seven in Cohort Two, eight in Cohort Three, and six in Cohort Four). As noted, however, we have been concerned about a cumulative dropout rate of 31% over the 4 years of the program. Reasons for the dropouts have included health problems and heavy residency workload, particularly in the intern year.

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fied to attempt to reduce the dropout rate.

Recruit at Least Three Underrepresented Minority Residents Each Year. There were two underrepresented minority residents in Cohort One, four in Cohort Two, three in Cohort Three, and none in Cohort Four. Overall, 9 of 28 participants (31%) have been members of underrepresented minority groups.

Registration

One early hurdle was how to register UCSF-Fresno residents as CSU-Fresno students. CSU-Fresno requires students in its postgraduate programs to complete the graduate record examination (GRE). Few residents have completed this examination. CSU-Fresno originally agreed to accept MCAT scores in lieu of the GRE examination and has now waived any requirement for test scores, since all students have completed a postgraduate course of study.

Another registration issue related to differing academic calendars. Residents begin their training in July. Course work for the combined residency/MPH program begins in August. In the first year, CSU-Fresno worked closely with the residency coordinator to facilitate registering combined residency/MPH students after CSU-Fresno’s registration deadline. Close collaboration between UCSF-Fresno and CSU-Fresno has now largely eliminated registration difficulties, and residents are able to register on time.

Residency Conflicts

Conflicts with residency schedules were a major concern for UCSF-Fresno. In addition, CSU-Fresno was worried that the addition of residents in the combined program would overcrowd their core MPH classes. To address these issues, CSU-Fresno, with the BHPPr grant support described above, agreed to offer separately scheduled courses in core subjects specifically for residency/MPH students. These courses were offered during the 7 pm to 10 pm time slot. In their internship year, residents have at most one evening class per week.

In subsequent semesters, residents take two classes each semester. Some of these classes were originally only offered from 4 pm to 7 pm, which was difficult for residents with clinical duties. To alleviate this con-

| Table 1 |
|-----------------|-----------------|-----------------|
| Combined Residency/MPH Course Schedule | | |

### 3-YEAR PROGRAM

<table>
<thead>
<tr>
<th>First year</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
<th>Summer Session</th>
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<tbody>
<tr>
<td></td>
<td>PH210 Seminar in health administration</td>
<td>Option course</td>
<td>PH290 Independent study</td>
</tr>
<tr>
<td>Second year</td>
<td>PH206 Environment and occupational health</td>
<td>PH202 Advanced public health statistics</td>
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<td></td>
<td>PH208 Health promotion</td>
<td>PH209 Advanced concepts in epidemiology</td>
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<tr>
<td>Third year</td>
<td>PH280 Seminar in techniques of health research</td>
<td>Option course</td>
<td>PH285F Field work</td>
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<tr>
<td></td>
<td>Option course</td>
<td>Option course</td>
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### 4-YEAR PROGRAM

| First year | Fall Semester | Spring Semester | |
|------------|---------------|-----------------| |
|            | No class | Option course | |
| Second year | PH210 | PH202 | |
|            | PH208 | PH209 | |
| Third year | PH206 | Option course | |
|            | PH280 | Option course | |
| Fourth year | Option course | PH285F | |
|            | Option course | PH298 or PH299 | |

Option courses:
- Health administration
  - PH213 Health planning and program evaluation
  - PH251 Health care economics
  - PH253 Human resources management
  - MBA210 Seminar in leadership and organizational behavior
- Health promotion
  - PH203 Seminar in community health organization
  - PH213 Health planning and program evaluation
  - PH225 Foundations in health promotion
  - Elective course from one of other options
- Environmental and occupational health
  - PH263 Air quality management
  - PH264 Management of water pollution
  - PH265 Hazardous materials management
  - PH266 Industrial hygiene principles
cern, CSU-Fresno has now developed a schedule that enables residents to plan their entire 3- or 4-year program so that all classes can be taken from 7 pm to 10 pm. This facilitates call, rotation, and evening clinic scheduling. Residents are responsible for identifying and resolving scheduling conflicts.

**Performance Standards**

Not surprisingly, some residents have had difficulty successfully completing the requirements of both the residency and the MPH program. Over the 4 years of the program’s existence, the cumulative dropout rate is 31%. The Family Practice Program has worked with UCSF-Fresno to develop requirements for residents receiving tuition scholarships. These requirements include good standing in the residency program (no probation), no failed courses in the MPH program, and a minimum grade point average in MPH course work of 3.0.

The first two residents graduated from the residency/MPH program in May 1999. As of January 2001, 18 students were actively enrolled in the program. Four should graduate in 2001, 11 in 2002, and three in 2003. Of the current enrollees, 11 are residents (seven family practice, three pediatrics, one medicine), six are faculty (three family practice, one medicine, two pediatrics), and one is a community physician. Seven residents have dropped out of the MPH program, five to concentrate on residency training (three PGY-1 residents, two PGY-2 residents), one PGY-1 for health reasons, and one PGY-1 who was dropped from residency.

**Participant Attitudes**

The first combined residency/MPH program students were party to the program’s ongoing metamorphosis. These students were like explorers of uncharted territory, uncertain of exactly what they would find. They confronted uncertainty, an increased workload, and the burden of sometimes conflicting expectations between their residency training and their MPH work. To assess participant attitudes, we developed a descriptive survey that was distributed in December 1999 to all 19 current or graduated MD/MPH students. Nonrespondents were contacted by phone by the combined program coordinator. Eighteen surveys were completed (95%), eleven from residents and seven from faculty and community physicians. Reasons given for enrolling in the residency/MPH program included acquiring public health skills in research methodology, community health, and health care administration. The MPH was perceived to be beneficial in other ways, including broadening students’ perspective on health care economics and improving career opportunities at home and abroad.

Ten of eleven resident respondents felt that participation in the MD/MPH program had a positive influence on their residency training. Of the 11 resident respondents, 7 said that the program had “some” influence on their recruitment; two residents said the program had “a great deal” of influence, and two residents said that the program had no influence (unaware of the program prior to entering the residency). Students were asked if they would have enrolled in the MD/MPH program if scholarship support for tuition was not available. Of the 18 respondents, 10 indicated that they would not have enrolled (eight residents, two faculty), five indicated that they would have enrolled (three residents, one faculty, one community MD), one was undecided, and two did not answer this question.

**Discussion**

Although the combined residency/MPH program began under the auspices of the Family Practice Program, it has appealed to residents and faculty across disciplines. For this reason, responsibility for administration of the residency/MPH program has moved to the UCSF-Fresno dean’s office. The Family Practice Program expects to continue offering up to four new scholarships per year to qualified family practice residents. CSU-Fresno has expressed ongoing support for the combined residency/MPH Program. The linkage with UCSF-Fresno is seen as a strength. The infusion of highly trained physicians into the MPH course has added a positive dimension to the CSU-Fresno MPH program.

Questions regarding the combined residency/MPH program remain. The additional time burden on participants needs to be further assessed and compared to participants in other types of MPH programs. The perceptions of important stakeholders, such as other residents, training program faculty, and MPH faculty, have not been ascertained, nor has the combined program achieved its goals and objectives. The residency/MPH program has not yet attracted top applicants and underrepresented minority students to UCSF-Fresno and the Central Valley of California. Meaningful outcome data on the types of projects and research generated by the combined residency/MPH program and their influence on underserved communities awaits collection. The quality of these efforts must be measured against the academic benchmarks of presentations and publications.

**Conclusions**

The combined residency/MPH program has encountered its share of growing pains. Over time, concerns regarding content, funding, selection of students, registration, performance standards, and scheduling conflicts have been addressed. The combined residency/MPH program is logistically feasible for a select group of motivated students interested in furthering their knowledge and expertise in the fields of community health and public health. The cost of this combined
residency/MPH program has not been prohibitive for the participating organizations. Other residency training programs can offer a combined residency/MPH program if a strong relationship with a university offering an MPH degree can be forged. The experience at UCSF-Fresno can help guide others contemplating a combined residency/MPH program through the developmental challenges they may encounter.

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REFERENCES