Public Health Educational Intervention in a Family Medicine Residency

English H. Gonzalez, MD, MPH

Emerging infections and bioterrorism pose increasing threats to the health of our communities. To protect patients, frontline providers like family physicians must learn and use core public health skills such as disease detection, surveillance, and response activities. This paper describes a unique approach to teaching these core public health skills by incorporating residents into ongoing disease surveillance and reporting activities in coordination with the local health department. Comparison of pre- and post-intervention surveys of residents demonstrated that this intervention increased resident self-perceived competency in disease detection and surveillance, knowledge of reportable conditions, and ability to engage response activities.

(Fam Med 2004;36(10):695-7.)

Recent events in the world have made us aware of our vulnerability and remind us of the importance of core public health activities such as disease detection, surveillance, and response activities. Health professionals must be adequately trained to recognize and respond to community health threats in a coordinated fashion with other local health organizations and agencies. National organizations are calling for renewed focus on training physicians in the areas of community and public health, recognizing that medical professionals are integral in ensuring the health of our communities. Recent research, unfortunately, demonstrates that most family physicians feel unprepared to meet this challenge. In addition, a review of the literature reveals a paucity of published information regarding public health training specifically in family medicine residency settings.

Given this, we hypothesized that our residents at Medical Center East (MCE) Family Practice Residency Program would also lack core public health knowledge and skills. A pre-intervention survey of residents confirmed our suspicion. To teach residents the core public health skills of disease detection, surveillance, and response activities, we developed a simple, yet we believe innovative, educational intervention with the goals of (1) promoting knowledge among family medicine residents regarding the role and activities of the public health department and (2) preparing residents to be proactive partners with local public health departments. To accomplish these goals, we partnered with our local health department and the Centers for Disease Control and Prevention (CDC). This intervention was approved by our Institutional Review Board.
Program Content and Organization (Table 1)

All residents (n=15) anonymously completed a pre-intervention survey with Likert scale, listing, and yes/no questions. (Examples of surveys available from author on request.)

The intervention began in September 2002 with a 1-hour presentation during ongoing monthly community medicine lecture series, attended by all residents. At this introductory conference, health department staff came to our clinic to meet the residents, explain their primary roles and responsibilities, describe the influenza surveillance program and sentinel physician responsibilities, and explain which conditions/illnesses are reportable and how to properly report these conditions/illnesses.

All residents participated in the longitudinal components of the intervention. From October 1, 2002, until March 31, 2003, residents served as sentinel physicians collecting influenza surveillance data during their continuity patient care sessions. Nurses reminded residents to collect surveillance data, which involved completing a tally sheet prepared by the health department requiring approximately 1 to 2 minutes of resident time per patient care session. These tally sheets were compiled and faxed to the health department weekly. To encourage further interaction with the local health department, all residents were required to report, to the correct health department division, any other reportable conditions discovered on their continuity patients. A “reportable condition” stamp was created and used on every abnormal lab that was a reportable condition to ensure resident participation.

Only PGY-IIIs completed the block component of the intervention (now a regular part of the PGY-II curriculum), in which residents worked in all major divisions of the health department. They spent at least 6 half days working with experts on disease surveillance projects and outbreak investigations. During this time, residents completed hypothetical case-based problem sets to guide their learning and were required to make a presentation to their peers on a public health topic of interest upon completion of the rotation.

In early April 2003, health department staff returned for a wrap-up conference with health department staff to thank the residents for their cooperation in reporting reportable conditions and for their participation in the influenza surveillance. Health department epidemiologists showed the residents how the data they had collected were used by the CDC.

All residents confidentially completed a post-intervention survey with questions very similar to the pre-intervention survey.

### Evaluation

#### Pre- and Post-Intervention Survey Analysis

Pre-intervention survey results found that, on a Likert scale of 1–5, residents’ level of interest in public health was “moderately high” (mean=3.6), and their self-perceived competency was “low” (mean=2.1), but they felt that public health was “very important” (mean=4.4). Only four residents reported having had any prior public health training. Ten residents could name five reportable conditions (when asked to list five.) Only three of 15 residents had ever reported a reportable condition, and two residents did not know where or how to report such a condition.

Chi-square analysis of pre- and post-intervention survey results found a statistically significant increase in residents’ self-perceived competency in public health (mean before intervention=2.1 to mean after intervention=3.1; $P=.0007$.) Interest in and perceived importance of public health were statistically similar before and after the intervention.

After the intervention, all residents could list five reportable conditions. Additionally, residents were three times more likely to have correctly reported a reportable condition (relative risk [RR]=3.33). Residents answered they would be willing to serve as sentinel providers in their communities in the future.

### Resident Feedback

During focus group-style debriefing, 50% of residents thought that participating in influenza surveillance helped them understand core public health concepts. Thirty percent thought participation heightened their awareness of dis-
ease patterns. Most found participation not overly burdensome, taking only an additional minute per patient care session. All residents agreed that introductory and wrap-up noon conferences with health department staff were very valuable and that meeting the staff made them more likely to engage response activities. Residents suggested arranging more such presentations.

**Partner Feedback**

Health department staff invited the residency program to participate in influenza surveillance for 2003–2004 and expressed excitement about a closer link between local providers and the health department. They “greatly enjoyed” having the PGY-II residents rotate through the health department and commented that residents asked great questions and seemed very interested. MCE Family Practice Clinic staff had few complaints about intrusiveness or hassle of the influenza surveillance or using the “Reportable Conditions” stamp.

**Conclusions**

This simple intervention successfully strengthened relations between public health and the local medical community, engaged residents in disease surveillance and response activities, and integrated well into existing curricula. The residents’ self-perception of competence in public health and their ability to recognize and report reportable conditions increased. With minor adaptations and improvements, this intervention could be used at other training programs to help ensure that family physicians are adequately prepared to ensure the health of the communities they serve.

**Acknowledgments:** This study was undertaken as part of the author’s Faculty Development Fellowship in Family Medicine at the University of North Carolina, funded by the Bureau of Health Professions, HRSA (#6-014-HP00019).

I thank Sam Weir, MD, from the University of North Carolina Department of Family Medicine, and Renee DeHart, MD, of the Medical Center East Family Practice Residency Program, for their critique of this manuscript.

**References**