Assessing Integration of Clinical and Public Health Skills in Preventive Medicine Residencies

Using Competency Mapping

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Purpose: To evaluate the utility of a competency mapping process for assessing the integration of clinical and public health skills in a newly developed Community Health Center (CHC) rotation at the University of Michigan School of Public Health Preventive Medicine residency.

Methods: Learning objectives for the CHC rotation were derived from the Accreditation Council for Graduate Medical Education core clinical preventive medicine competencies. CHC learning objectives were mapped to clinical preventive medicine competencies specific to the specialty of public health and general preventive medicine. Objectives were also mapped to The Council on Linkages Between Academia and Public Health Practice's Tier-2 *Core Competencies for Public Health Professionals.*

Results: CHC learning objectives mapped to all four (100%) of the public health and general preventive medicine clinical preventive medicine competencies. CHC population-level learning objectives mapped to 32 (94%) of 34 competencies for public health professionals.

Conclusions: Utilizing competency mapping to assess clinical–public health integration in a new CHC rotation proved to be feasible and useful. Clinical preventive medicine learning objectives for a CHC rotation can also address public health competencies.

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The need to bridge the gap between primary care and public health has been well identified and characterized over the last several decades. In 2005, 10 years after the American Medical Association and American Public Health Association launched the *Medicine and Public Health Initiative*,[1] Ronald Davis, MD, noted the need for ongoing "marriage counseling" for medicine and public health.[2] The revised 2010 *Core Competencies for Public Health Professionals*, originally developed by the Council on Linkages Between Academia and Public Health Practice (COL)[3] in 2001, were followed with a 5-year strategic plan[4] that promotes further collaboration between public health and healthcare professionals and organizations. Currently, the IOM is examining the practices by which public health and primary care can improve integration to advance population health.[5]

A practical application of public health and healthcare integration is currently being implemented in preventive medicine residencies (PMRs) throughout the U.S., the only medical specialty to formally incorporate public health training. Preventive medicine addresses the health of individuals and populations, and encompasses three specialty areas that have core competencies in common: aerospace medicine, occupational medicine, and public health and general preventive medicine (PH/GPM). Of the 72 U.S. preventive medicine residencies, PH/GPM represents the majority, constituting 41 of these residency programs (57%).[6] The Accreditation Council for Graduate Medical Education (ACGME) defines six competency domains which assist residency directors across all clinical programs to assess physician competencies during resident training, consisting of patient care, medical knowledge, practice-based learning and improvement, systems-based practice, professionalism, and interpersonal skills and communication. The Preventive Medicine Residency Review Committee (RRC) specifies core competencies within each of these domains that must be

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attained by all preventive medicine residents regardless of their specialty area, as well as additional specialty-specific clinical, preventive medicine, and public health competencies for ACGME-accredited PMRs.[7]

Historically, clinical rotations have not been required as a training component of PH/GPM specialty residency training, although residencies were at liberty to provide clinical experiences for residents. This changed on July 1, 2011, when the ACGME's Preventive Medicine RRC formally instituted new residency requirements for PH/GPM specialty training, specifying a minimum of 2 months per year of direct patient care experience.[7] These new specialty requirements could contribute substantially to promoting a public health workforce with a highly integrated clinical and public health skill set that is needed to advance population health and health equity in any healthcare or community setting.

Michigan, like many states, is experiencing a shortage of well-trained physicians in the public health workforce generally, and of primary care providers in areas of underserved, poor populations, specifically.[8] Access to primary healthcare services is a major concern for residents of Michigan, particularly for urban areas like Detroit.[8] Despite the potential positive impact physicians trained in PH/GPM could have on the provision of primary care and other care services, the American College of Preventive Medicine (ACPM) estimates that many states are dramatically lacking in this specialty. In 2006, ACPM's report to the IOM estimated that there were approximately 10,000 physicians in public health practice at that time, far short of the ideal recommended number of 20,000, a standard confirmed by the IOM in 2007.[9,10]

The University of Michigan School of Public Health (UMSPH) has had a special interest in training preventive medicine physicians in the specialty area of PH/GPM for careers in public health by providing a strong grounding in applied public health practice preparatory to joining the state's public health workforce. While the placement of trained physicians in governmental public health organizations serving medically underserved communities has been one of the UMSPH preventive medicine residency's primary objectives, a new focus of the residency is to improve integration of preventive medicine and primary care. This integration is intended to assist with placement of graduates in Federally Qualified Health Centers (FQHCs), such as Community Health Centers (CHCs), and to meet the new ACGME requirements for provision of direct patient care. Consequently, the residency has developed mandatory clinical rotations in CHCs funded by the Health Resources and Services Administration (HRSA) to create a training venue for preventive medicine residents to integrate preventive medicine and public health, while simultaneously offering primary care clinical services to the underserved populations in Michigan. CHCs were chosen as rotation sites because they collectively represent the largest primary care network in the U.S. and are situated in areas and populations of underserved or unmet healthcare needs.[11] With formal affiliation agreements for CHC rotations at multiple locales in largely urban, poor areas of Detroit, Jackson, and Lansing MI, the PMR curriculum is intended to incorporate clinical and preventive medical practice into public health settings, while also requiring residents to utilize public health practice skills at clinical sites.

The newly developed CHC rotation identifies required tasks that incorporate multiple learning objectives that enable the resident to develop the requisite skills to extrapolate individual care experiences to a broader public health perspective. To better equip residents to apply primary care services to a population health approach, residents engage in nine different tasks during their CHC rotations (Table 1) to achieve the ACGME competency-based learning objectives. These tasks primarily emphasize the delivery of quality primary care and clinical preventive services (Tasks 1–4); however, the residents are also asked to produce a related public health educational seminar and public health case study, among a number of other population-oriented tasks.

To assess the integrative nature of the new CHC rotation, the PMR residency staff mapped CHC rotation-specific learning objectives to ACGME clinical preventive medicine competencies for residents training in the specialty of PH/GPM and to a subset of nationally recognized *Core Competencies for Public Health Professionals* recently updated by the COL.[3] The intent of this mapping exercise was threefold: to evaluate how well the current core competency-based CHC clinical preventive medicine learning objectives mapped to clinical competencies for PH/GPM; to assess how well the objectives mapped to a subset of COL public health core competencies; and to assess the overall integration of clinical and public health skill sets utilized by resident trainees while engaged in direct patient care tasks at the CHC rotations.

Methods

The CHC learning objectives were developed directly from the ACGME core clinical preventive medicine competencies required for all preventive medicine residents regardless of specialty, under "IV.A.5.a).(1).(k) skills in clinical preventive medicine,"[7] utilizing steps outlined in the *Competency to Curriculum Toolkit*.[12] These skills are made up of three core competencies: "IV.A.5.a).(1).(k).(i) Develop, deliver, and implement appropriate clinical services for both individuals and populations in order to diagnose and treat medical problems and chronic conditions"; "IV.A.5.a).(1).(k).(ii) Apply primary, secondary, and tertiary preventive approaches to individual and population-based disease prevention and health promotion"; and "IV.A.5.a).(1).(k).(iii) Develop, implement and evaluate the effectiveness of appropriate clinical preventive services for both individuals and populations."[7]

The CHC learning objectives utilized by the residency program were derived from the subcompetencies that address the delivery of