

Integrating Public Health in Medical Education

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Education in the public health and medical arenas have largely operated independently since the inception of formal education in the disciplines (Geltner, 2019). More recently, medical education curricula have begun to shift in recognition of the fact that there remains a delicate balance between the health of the individual and the health of the community (Roussos & Fawcett, 2000). Courses in medical schools across the nation have begun to address topics such as biostatistics and epidemiology; however, existing curricula in medical education continue to fail in addressing the overarching themes of public health science. Therefore, a need for integrated and cohesive programs to create leaders possessing the necessary skills and knowledge to bridge the gap between medicine and public health remains a critical need in medical education.

Abraham Flexner was hailed in 1910 as a visionary and progressive academic when he released his report to reform medical education. Since that time, curricula across the United States and indeed, across the world, have been largely based on his design and recommendations. While elements of the Flexner report remain pertinent and important to the education of physicians, what is often unrecognized is that the landscape in which physicians' practice has changed dramatically in the 110 years since the inception of his report.

At the time of the Flexner report, communicable disease remained common causes of death in the United States – illnesses such as tuberculosis were quite widespread and necessitated a rapid expansion of public health in those domains (Maeshiro, et al., 2010). Today, chronic illness such as cancers and pulmonary disease are far more common cause of death and disability. Accordingly, public health officers have begun to shift focus to include chronic conditions (Tricco, Runnels, Sampson, & Bouchard, 2008); however, the vital collaboration between healthcare providers and public health officials continues to lag woefully behind.

This project was completed through an extensive literature review as well as a detailed examination of the current curriculum offered at Des Moines University to offer recommendations on integration opportunities within a university that offers both public health and medical education.

Participants: Key participants in this project were the author, the project preceptor and library staff who were integral in identifying relevant literature related to the project. The project preceptor was Dr. Craig Canby, Associate Dean for Medical Curricula at Des Moines University.

Procedure: The literature review was completed using primary sources in academic medicine and public health as well as guidelines from the Liaison Committee on Medical Education, American Medical Association and more. Upon completion of a review of the relevant literature, recommendations were made based upon the currently offered curriculum at Des Moines University. In an effort to assess the public health preparedness of a student enrolled in the clinical dual degree program in medicine and public health currently offered at the university, a simulated Certified in Public Health examination was administered consisting of retired questions from the CPH examination.

Measures: Results were obtained from the simulated exam in the domains assessed by the National Board of Public Health Examiners through the CPH exam. Additionally, a written narrative was delivered detailing opportunities for integrating public health in the osteopathic medicine program. Notably, recommendations were made for the entirety of the doctoral program including both preclinical and clinical activities and objectives.

The Certified in Public Health diagnostic examination was completed and results were reviewed using the domain feedback provided by the National Board of Public Health Examiners. The examination of 50 questions was completed in 44 minutes and score report reviewed as provided by the NBPHE (see figure below). The results of this formative assessment demonstrated that the highest performance was seen in the biostatistics domain, while the lowest performance was noted in the health policy and management domain. Average performance (88% correct answer score) were seen in the environmental health, epidemiology and social/behavioral science domains.

The course catalog for the College of Osteopathic Medicine was critically reviewed and examined for opportunities to integrate public health topics in both preclinical and clinical education. Preclinical educational opportunities were identified in a number of courses including biochemistry, foundations of physicianship and microbiology/immunology using a number of instructional methods including problem-based learning and case study activities. Additionally, a global objective-based clinical year aspect of public health inclusion was proposed (see figure below).

After a thorough review of calls for integration, principles recommended for incorporation and attempts at integration across the nation in various schools of medicine, several key areas were identified within Des Moines University in which these topics could be included in the existing curricula. Both the basic science (years 1 and 2) as well as the clinical clerkship (years 3 and 4) present unique opportunities and challenges to expose medical students to these topics. In doing so, physicians in training may be better prepared to address the changing needs of the patients and communities they serve.

This project elucidates both the need for integration of population health concepts in medical schools across the nation as well as identifies those opportunities at Des Moines University. As evidence and data is the driver for development within the university, further research will be required should these programs be implemented at the university level. Evaluation methods for future research, as detailed above, could center around student performance in public health domains. These methods could include scholastic aptitude testing in the form of multiple choice exams in the pre-clinical years and could also range to evaluation of practical application in the standardized patient or clinical settings. Utilizing data collected from these assessments, areas in which further improvement is needed are identified and adjustments can be made to the curriculum.

National Board of Public Health Examiners Certified in Public Health Practice Examination INDIVIDUAL SCORES

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Finish date: 5/14/2019 12:04:20 PM Central Daylight Time
Points: 43 of 50
Raw Score: 43

Test/Category	Points	Percent
Certified in Public Health Practice Examination	43 of 50	86%
I. Biostatistics	8 of 8	100%
II. Environmental Health Science	7 of 8	88%
III. Epidemiology	7 of 8	88%
IV. Health Policy and Management	5 of 8	63%
V. Social and Behavioral Sciences	7 of 8	88%
VI. Cross-cutting Competencies	9 of 10	90%

Specialty/Clerkship	Example Objective	Example Related Activity
Family Medicine	Critically examine management of chronic disease in the outpatient setting and common causes of treatment noncompliance.	Discuss treatment compliance, medication savings opportunities and lifestyle modification with a patient experiencing chronic disease.
Internal Medicine	Evaluate discharge/home-going needs of hospitalized patients.	Work with social work/case management on an assigned patient to understand the discharge and follow-up process for hospitalized patients.
General Surgery	Identify patients at risk for developing colorectal cancer.	Counsel on risk factor modification, screening recommendations and intervals for follow up.
Pediatrics	Understand vaccination necessity, access and compliance in the region of their clerkship.	Counsel on importance of vaccination adherence for pediatric patient as well as other household members, including benefits and risks of vaccination.
Psychiatry	Critically examine the availability of substance abuse resources in the region of their clerkship.	Attend local assembly for recovery to include alcoholics or narcotics anonymous.
Emergency Medicine	Evaluate patients with chronic disease for disease sequelae and opportunities for more effective outpatient management.	Discuss treatment adherence and barriers to long term outpatient care including primary care access with evaluated patient.
Obstetrics & Gynecology	Identify women's healthcare and contraception needs in evaluated patients.	Counsel on options for contraception and safe sexual practices with evaluated patients.

Geltner, G. (2019). In the camp and on the march: military manuals as sources of studying premodern public health. *Medical History*, 44-60.

Maeshiro, R., Johnson, I., Koo, D., Parboosingh, J., Carney, J., Gesundheit, N., . . . Cohen, L. (2010). Medical education for a healthier population: reflections on the Flexner Report from a public health perspective. *Academic Medicine*, 211-219.

Tricco, A., Runnels, V., Sampson, M., & Bouchard, L. (2008). Shifts in the use of population health, health promotion and public health: a bibliometric analysis. *Canadian Journal of Public Health*, 466-471.

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