

Who Will Keep the Public Healthy? – Educating Public Health Professionals

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Introduction

Last week in Palau I interviewed several Environmental Health workers at the Ministry of Health who were taking in-country undergraduate Certificate/Diploma-level courses in public health conducted by the School of Public Health & Primary Care / Fiji School of Medicine. This was their first ever formal university-level training activity. As a group they were very excited by this in-country opportunity and they gave their FSM Lecturer, Navitalai Litidamu, high marks. Their enthusiasm was frankly infectious and refreshing. They, like most of the allied health workers in Palau, had had only homegrown training activities in their discipline and seemed to cherish this opportunity for formal learning. In listening to their animated responses, I wondered about how this training would advance them in their profession, what was its relevancy to the practice of environmental health in Palau, and how they would better serve the public health needs of their clients and communities as Palau enters its second decade of independence.

In 2003 the Robert Wood Johnson Foundation commissioned the prestigious Institute of Medicine to address such questions - though obviously on a grander scale. The IOM's charge: to do a situational analysis of public health training and education, contrast it to future public health needs, and develop a framework of how such population focused public health training should be taught into the 21st century. With this mandate, the IOM Committee on Educating Public Health Professionals for the 21st Century was formed and began its one-year study. "Who Will Keep the Public Healthy? - Educating Public Health Professionals" is their report and – although it's written with the United States in mind – it addresses relevant public health issues that are important to the training of Environmental Health workers in far away Palau.

Building on past IOM Reports (The Future of Public Health, 1988, and Assuring the Health of the Public in the 21st Century) the Committee defines a public health

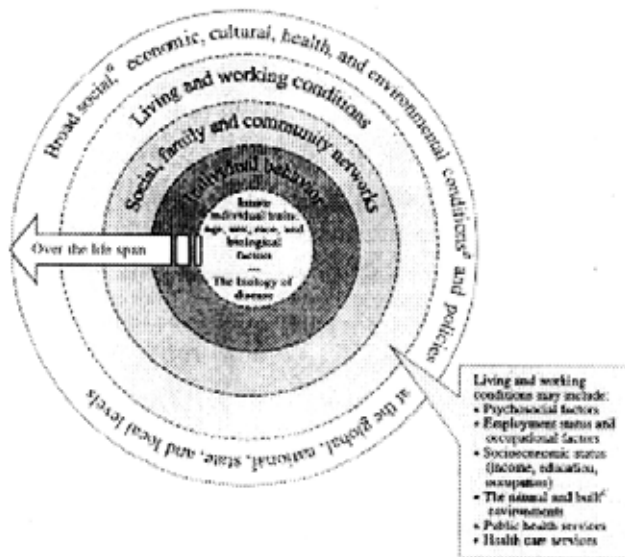
professional as "a person educated in public health or a related discipline who is employed to improve health through a population focus". Public health professionals contribute to improving the health of the public in various ways: develop and implement programs that prevent the spread of infectious and non-communicable diseases, work with communities to address a wide range of public health problems, conduct research on the effectiveness of health intervention programs, translate the results of other research to address real-world problems, work with policy makers to translate science into practical policies, and make sure that the public health system is prepared to respond to immediate challenges and threats. "To function most effectively, public health professionals must be well educated and trained. They must have a framework for action and an understanding of the ways in which their activities affect the health of individuals and populations, and of the multiple determinants of health."

Understanding determinants of health – an ecological view

In developing its framework, the Committee addresses the issues of determinants of health and asks: "Why are some people healthy and others not?" If fifty percent of mortality is due to factors other than biology or medical care, obviously the answers are complex and not only deal with issues of disease and illness but also deal with who we are, where and how we live and work, and the social and economic policies of our governments. Therefore, "to understand how to improve health, we first must understand the determinants of health and how they interact."

To get to a practical and relevant framework, the Committee reviews how the definition of health has changed in modern times, starting with the classical WHO definition of health (1948), and moving towards a more ecological view - recognizing that multiple factors (determinants) are related and linked in many ways to

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SOURCE: The Future of the Public's Health (IOM 2003)

NOTES: Adapted from Dahlgren and Whitehead, 1991. The dashed lines between levels of the model denote interaction effects between and among the various levels of health determinants (Worthman, 1999).

* Social conditions include, but are not limited to: economic inequality, urbanization, mobility, cultural values, attitudes and policies related to discrimination and intolerance on the basis of race, gender, and other differences.

* Other conditions at the national level might include major sociopolitical shifts, such as recession, war, and governmental collapse.

* The built environment includes transportation, water and sanitation, housing, and other dimensions of urban planning.

Living and working conditions may include:
 • Psychosocial factors
 • Employment status and occupational factors
 • Socioeconomic status (income, education, occupation)
 • The natural and built environments
 • Public health services
 • Health care services

FIGURE 5-1 A guide to thinking about the determinants of population health.

influence our health.

A more contemporary ecological model of health "assumes that health and well being are affected by interaction among multiple determinants including biology, behavior, and the environment. Interaction unfolds over the life course of individuals, families, and communities, and evidence is emerging that societal

level factors are critical to the understanding and improving the health of the public (IOM, 2000)". The ecological view, then, "is a perspective that involves knowledge of the ecological model of determinants of health and an attempt to understand a specific problem or situation in terms of that model". And an ecological approach to health "is one in which multiple strategies are developed to impact determinants of health relevant to the desired outcomes".

Having embraced this model, the Committee believes that understanding this model is "necessary to develop, implement, and evaluate the effectiveness of interventions designed to improve health". To this end it quotes McMichael and Beaglehole (2000):

"Public health researchers and practitioners, and those in the political and public realms with whom they interact, must take a broad view of the determinants and, indeed, the sustainability of the population health. This is an ecological view of health; an awareness that shifts in the ecology of human living, in relation to both the natural and social environments, account for much of the ebb and flow of diseases over time."

If such a model will become operational in the 21st century, "a variety of forces – among them globalization, technological and scientific advances, and rapid demographic shifts – are hastening the need to refocus attention and resources away from these traditional biomedical efforts toward those of population health. The ecological model must then influence public health workforce needs and be central to an innovative framework for education, training, and research."

A visual, contextual, and layered figure demonstrating the interplay of both individual and population health adapted by from Dahlgren and Whitehead (1991) presented in the report is worth noting (Figure 5-1 reproduced above).

The Future of Public Health Education

The Committee acknowledged that the traditional core areas of public health education remain important: epidemiology, biostatistics, environmental health, health services administration, and social and behavioral sciences. But for the 21st century and for public health professionals to look beyond biological risk factors that affect health and seek to also understand the impact on health of environmental, social, and behavioral factors, eight

Table 1: Evolving definition of health:

- WHO definition, 1948: "a state of complete physical, mental, and social well being, not merely the absence of disease and infirmity"
- Lalond, 1978: health is influenced by environment, lifestyle, human biology, medical care, and health care organizations;
- Evan and Stoddard, 1994: a framework for determinants of health must provide for distinctions among disease, health, functioning, and well being and should consider both behavioral and biological responses to social and physical environments;
- IOM, 1999: individual characteristics (biology, life course, life-style and health behavior, personality and motivation) and environmental characteristics (social and cultural influences, economic and political factors, physical and geographic factors, health and social care) influence health-related quality of life (symptoms, functional status, health perceptions, and opportunity);
- Kaplan et al, 2000: an ecological model - multilevel approach to health determinants including pathophysiological pathways, genetic/constitutional factors, individual risk factors, social relationships, living conditions, neighborhoods and communities, institutions and social and economic policies have a major impact on health.

additional emerging content areas will be significant to public health and public health education for some time to come: informatics, genomics, communication, cultural competence, community based participatory research, global health, policy and law, and public health ethics. The Committee also recommended that for these emerging content areas competencies be identified, each be included in graduate level public health education, continuing development and creation of new knowledge be pursued, and the opportunity for specialization be offered.

environmental health workers in Palau, Yap State, and the Marshall Islands. Soon unprecedented numbers of Micronesian health care workers will graduate with Certificates, Diplomas, and Masters Degrees in Public Health. This dramatic increase in in-country face-to-face and distance learning in public health in the region reflects a renewed commitment by local governments to implement a community health approach to its broad range of health care problems instead of just the curative medical approach which has dominated regional health care services and budgets for decades. Whether local

Table 2: Special Public Health Challenges in the 21st Century:

Globalization and its affect on the environment include issues of

- increased travel, trade, and economic growth;
- diffusion of technology accompanied by negative social and environmental conditions;
- increasing disparity between the rich and the poor;
- environmental degradation;
- food security issues;
- drug resistant strains of emerging and re-emerging diseases, and the increase in international trade fostering the distribution of products associated with major health risks like alcohol and tobacco;

Advances in science and medical technology include important ethical, legal, and social questions

- the correct and incorrect diffusion of health information through communications technology;
- public health informatics: will improve public health surveillance capacity balanced by concerns of confidentiality;
- genomics: balancing the promise of better understanding the role genetics plays in morbidity and mortality versus the threat of discrimination in the workplace and denial of health insurance;
- while scientific advances have improved health, about half of all causes of mortality are linked to social and behavioral factors and accidents (McGinnis and Foegen, 1993) and only 2% of the U.S. health care budget is invested in health prevention (Scrimshaw, 2001).

Demographic transformations:

- aging populations leading to increase of chronic diseases, and geriatric and mental health conditions;
- the need to promote healthful, functional aging by mitigating the effects of these diseases;
- growing racial and ethnic disparities: improvements in health have not yet been felt equally by all populations;

need to improve health outcomes, close the gaps in access to health care, and assure equity in quality of care.

In Context: Educating Public Health Professionals in Palau and Micronesia

Public health and primary care training of the health workforce in Micronesia has been designated a priority^{1,2,3,4}. To address this need, since 2002, Palau Community College's Palau Area Health Education Center⁵ has coordinated U.S. federal resources from the John A. Burns School of Medicine to contract the Fiji School of Medicine's School of Public Health and Primary Care (SPH&PC) to conduct both postgraduate and undergraduate-level courses in Public Health for 150 physicians, nurses, health administrators, and

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health professionals take on a more contemporary ecological view in health as proposed in the above IOM report or continue in a more traditional approach in implementing public health programs (or a mix of both) remains to be seen.

However, when I reflect upon the excitement and enthusiasm demonstrated by the public health students in Palau, Yap, and the Marshall Islands and note the dedication of the FSM's School of Public Health & Primary Care's faculty, who, like Navi Litidamu, relish their teaching experience in remote corners of the Micronesia, I look forward, in five to ten years, to seeing how these new public health professionals will keep the public healthy. Who knows, maybe the Fiji School of

Medicine's School of Public Health & Primary Care will get high marks from the IOM for its sentinel efforts in public health training in our area of the Pacific. Locally, I know some Environmental Health students who will vote for them now.

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That the birds of worry and care fly above your head, this you cannot change,
But that they build nest in your hair, this you can prevent.
(Chinese Proverb)