

**Advisory Committee on Interdisciplinary,
Community-Based Linkages (ACICBL)**

**Redesigning Health Professions Education and
Practice to Prepare the Interprofessional Team to
Care for Populations**

**Twelfth Annual Report
to the
Secretary of the United States
Department of Health and Human Services
and the
Congress of the United States**

August 2013



The views expressed in this report are solely those of the Advisory Committee on Interdisciplinary, Community-Based Linkages, and do not represent the perspectives of the Health Resources and Services Administration nor the United States Government.

Redesigning Health Professions Education and Practice to Prepare the Interprofessional Team to Care for Populations

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Advisory Committee on Interdisciplinary, Community-Based Linkages (ACICBL)

Mission

The Advisory Committee on Interdisciplinary, Community-Based Linkages (ACICBL) provides advice and recommendations to the Secretary of the Department of Health and Human Services (Secretary) concerning policy, program development, and other matters of significance related to interdisciplinary, community-based training grant programs authorized under sections 750-759, Title VII, Part D of the Public Health Service (PHS) Act, as amended by the Affordable Care Act. The following sections/programs are included under this Part:

- 750 – General Provisions
- 751 – Area Health Education Centers
- 752 – Continuing Education Support for Health Professionals Serving in Underserved Communities
- 753 – Education and Training Related to Geriatrics
- 754 – Quentin N. Burdick Program for Rural Interdisciplinary Training
- 755 – Allied Health and Other Disciplines
- 756 – Mental and Behavioral Health Education and Training Grants
- 757 – Advisory Committee on Interdisciplinary, Community-Based Linkages
- 759 – Program for Education and Training in Pain Care

The ACICBL prepares an annual report describing its activities conducted during the fiscal year, including findings and recommendations made to enhance these Title VII programs. This annual report is submitted to the Secretary and ranking members of the Senate Committee on Health, Education, Labor, and Pensions and the House of Representatives Committee on Energy and Commerce.

Report Development Process

This 12th annual report includes findings and recommendations focusing on a select topic that encompasses a particular aspect of interprofessional education and training for healthcare providers covered in Title VII, Part D, sections 750-759 of the PHS Act. The ACICBL prepared this report after conducting an independent search of published literature on the topic, hearing testimony from experts in various areas relevant to the topic, engaging in dialogue with each other, and utilizing individual expertise and experiences in this area.

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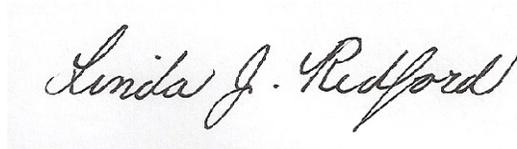
The Advisory Committee on Interdisciplinary, Community-Based Linkages (ACICBL) provides advice and recommendations on policy and program development to the Secretary of Health and Human Services (Secretary) concerning the activities under Title VII, Part D of the Public Health Service (PHS) Act as authorized by section 757 (42 U.S.C. 294f), and as amended by the Affordable Care Act, Public Law 111-148. The ACICBL is governed by provisions of the Federal Advisory Committee Act (FACA) of 1972, (5 U.S.C. Appendix 2), which sets forth standards for the formation and use of advisory committees.

Each year, the ACICBL selects a topic concerning a major issue within the healthcare delivery system that is relevant to the mission of the Bureau of Health Professions (BHP) Title VII – Part D, Interdisciplinary Community-Based Linkages programs. After the ACICBL analyzes the selected topic, it develops and sends recommendations to the Secretary concerning policy and program development. In 2012, the ACICBL examined *Redesigning Health Professions Education and Practice to Prepare the Interprofessional Team to Care for Populations*.

This report is the culmination of the efforts of many individuals who provided their expertise to the ACICBL during three required formal meetings: the first as a scheduled conference call on October 4, 2011; the second held in Washington, D.C., on November 7 and 8, 2011; and the third as a scheduled conference call on April 24, 2012. As noted throughout the report, experts informed the ACICBL; provided their knowledge and expertise; and responded to a broad array of issues concerning population health, cultural competency, health promotion, technology, and interprofessional teams. The members of the ACICBL express appreciation to all presenters for their time and knowledgeable expertise.

Finally, this report has benefited from the capable assistance of federal staff from the Health Resources and Services Administration, Bureau of Health Professions, Division of Public Health and Interdisciplinary Education: Dr. Joan Weiss, Designated Federal Official, Chief, Geriatrics and Allied Health Branch (GAHB); Mr. Lou Coccodrilli, Chief, Area Health Education Centers Branch; CAPT Norma J. Hatot, Senior Nurse Consultant, United States Public Health Service; Dr. Nina Tumosa, Public Health Analyst, GAHB; Dr. Tamara Zurakowski, Public Health Analyst, GAHB; and Ms. Crystal Straughn, Technical Writer, GAHB. The ACICBL appreciates the hard work and dedication of these individuals in producing this report.

Sincerely,

A handwritten signature in cursive script that reads "Linda J. Redford". The signature is written in black ink on a light-colored background.

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Redesigning Health Professions Education and Practice to Prepare the Interprofessional Team to Care for Populations

Executive Summary

The Advisory Committee on Interdisciplinary, Community-Based Linkages (ACICBL) provides advice and recommendations on policy and program development for the Secretary of Health and Human Services (Secretary) concerning activities under Title VII, Part D of the Public Health Service (PHS) Act as authorized by section 757 (42 U.S.C. 294f) as amended by the Affordable Care Act, Public Law 111-148. Programs under this Part are legislatively mandated to meet national goals for interdisciplinary, community-based linkages. In this report the term “interprofessional¹” is used in lieu of “interdisciplinary.”¹

The U.S. healthcare system has traditionally focused on the individual patient, caring for people when they are sick but doing little to prevent the start of illness. A shift in focus to a population-based health model is needed if we are to be successful at improving health outcomes and reducing the cost of care.

Population health refers to the health of an aggregate as measured by a variety of health status indicators. It is influenced by such factors as social, economic and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services. By shifting the focus from groups to individuals, population health encourages coordination of interventions on such priorities as health promotion, disease prevention, health behavior change, and self-management (Nash, 2011). Core concepts of public health are integrated throughout the delivery of healthcare to populations.

Population health requires that all healthcare professionals be prepared to address the increasing diversity of the U.S. population. Healthcare professionals must be educated and prepared to care for populations with diverse needs, behaviors, resources, perceptions of health and healthcare, and outcomes of care. They must be particularly knowledgeable and competent to care for people whose culture, language, economic status, age, and/or education result in health disparities, chronic diseases, and poor health outcomes. Cultural competency and population health content must be integrated in certificate, degree, and continuing education programs.

There must also be a change in the paradigm of healthcare to a focus on health promotion/disease prevention with a greater reliance on the power of technology, for example, electronic health records, the Internet, and the Cloud. Proficiency in, and expansion of, the use of technology will enable providers to better understand and document population health needs and to address those needs more effectively and efficiently. Clinical health care for patients who are sick will remain important. A focus on health promotion must not become the precursor to “blaming the victim” or disease.

¹ In recent years, the term “interprofessional” has become widely used because it is more inclusive of all healthcare professionals.

Recommendations

The ACICBL reviewed the issue of how healthcare professionals, through interprofessional collaboration and optimal use of available technologies, can better care for populations at its meetings in October and November 2011 and April 2012. The ACICBL subsequently developed a set of recommendations for healthcare educators, funders, and policymakers that are listed below. Review of the issue and recommendations by the ACICBL are detailed in this report.

Recommendation 1: The ACICBL recommends faculty across all health professions schools and continuing education programs adopt and implement curricular changes that will equip future and current health professionals with the knowledge, skills, and tools to understand and effectively and efficiently address the health needs of populations by employing an interprofessional team approach.

Recommendation 2: The ACICBL recommends health professions accrediting bodies include language in their accreditation standards that will require health professions programs and schools to integrate significant population health content and interprofessional population health practice into the basic curriculum.

Recommendation 3: The ACICBL recommends licensing bodies include questions in their examinations that measure entering health professionals' understanding of population health and their ability to integrate population health strategies into practice.

Recommendation 4: The ACICBL recommends that within the next two years, the Health Resources and Services Administration (HRSA) incorporate language into Title VII, Part D program funding opportunity announcements that encourages the inclusion of a population health focus in the curricula of health professions education programs. Such language should encourage both didactic and clinical learning experiences with a focus on interprofessional competencies across the educational continuum from entry level professional education through continuing professional development. Areas to be included are content about, and experience with diverse populations with an emphasis on the principles of cultural competency in clinical practice. Consideration of the leading health indicators and the social and environmental determinants of health and use of multiple technological applications to promote positive population health outcomes should also be included.

Recommendation 5: The ACICBL recommends the establishment of, and support for, a national clearinghouse for population health-related educational resources that can be used by public health and other health professionals and degree granting and continuing education programs. The proposed title for this clearinghouse is the *National Resource Center for Population Health Education and Practice*. The creation of this clearinghouse should be encouraged by HRSA and supported through public and private resources.

Background

Healthcare in the United States is under unprecedented scrutiny and pressure to change due to a combination of factors. These include rapidly rising healthcare costs, inadequate access to care for millions of people, and evidence that key healthcare indicators in the United States are not improving and, in many instances, are worsening. Although the United States spends far more per person on healthcare than any other nation, it lags far behind peer nations in the following health areas: infant mortality and low birth weight, injuries and homicides, adolescent pregnancy and sexually transmitted infections, HIV and AIDS, drug-related deaths, obesity, diabetes, heart disease, chronic lung disease, and disability (Institute of Medicine [IOM], 2012). Americans, particularly women, are dying at younger ages than people in almost all other high income countries. This trend has been getting worse for three decades (IOM, 2012).

Health-related behaviors that contribute to health disparities provide a stark indication of the issues we face. A majority of U.S. adults (81.6%) and adolescents (81.8%) do not engage in the recommended amount of physical activity (U.S. Department of Health and Human Services, 2008). Less than one in three adults and an even smaller proportion of adolescents consume the recommended daily intake of vegetables (Centers for Disease Control and Prevention, 2009). One consequence of a sedentary lifestyle and suboptimal nutrition is a dramatic increase in obesity, with one in three adults and one in six children and adolescents in the United States being obese. Obesity is a significant contributor to escalating healthcare costs for conditions such as heart disease, stroke, and type 2 diabetes (Healthypeople.gov, 2013).

Our current healthcare system is not only failing to improve the overall health of Americans, but it also shows little evidence of being prepared to deal with the complexity of the most serious healthcare issues in this country. It is no longer acceptable to focus primarily on the care of individuals or for health professionals to work in silos with limited collaboration with other health professionals. It is similarly unacceptable for healthcare professionals to be inadequately prepared to recognize, understand, and address the complexity of biological, social, behavioral, economic, and environmental factors that influence major health conditions. The focus and the incentives that guide our healthcare system need to change.

Improving the health of the U.S. population and controlling healthcare costs require that “health” be understood and addressed within a more comprehensive and interprofessional context than our traditional individual healthcare focus (Josiah Macy Jr. Foundation, 2013). A model for healthcare that is generating increasing interest from policymakers and many in the healthcare community is that of “population health”. Although population health is not a new term or concept, its incorporation into the American healthcare system is more urgent now than ever before.

The concept of “population health” builds from public health, community health, and health promotion. The concept has been evolving in countries around the world during the last several decades. One of the more comprehensive definitions of population health, as developed by the Canadian Federal, Provincial, Territorial Advisory Committee on Population Health is:

Population health refers to the health of a population as measured by health status indicators and is influenced by social, economic and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services.

As an approach, population health focuses on the interrelated conditions and factors that influence the health of populations over the life course, identifies systematic variations in their pattern of occurrence, and applies the resulting knowledge to develop and implement policies and actions to improve the health and well-being of those populations (Health Canada, 2001).

Given the pressing need to move the healthcare system toward a more effective and sustainable model, the ACICBL elected to devote this report to population health and the strategies needed to facilitate a population health model of care in the United States. The implications of these changes are profound for the curricula of health professions programs and schools and continuing education for health professionals. Content related to population health and interprofessional clinical training in population health must play a key role in health professions education and ongoing learning.

The Changing Healthcare Landscape

The passage of the 2010 Patient Protection and Affordable Care Act (ACA) provided momentum for many changes that will impact how healthcare is provided, how its effectiveness is measured, and how patients and providers will interact in the system. The intent of the ACA is to increase access to healthcare services, improve the coordination of healthcare, and reduce the overall cost for providing care. Underlying many of the changes in the ACA is an expectation that the healthcare delivery system will evolve from a model that focuses primarily on the individual patient to a model that identifies, addresses, and monitors both the health status of individual patients and distinct populations of patients being served. A number of policies and programs initiated through the ACA and other changes occurring inside and outside the healthcare environment are certain to facilitate population health initiatives and are discussed in the following sections.

New Healthcare Models

The ACA encourages the formation of new or reconfigured models for delivering healthcare services, such as patient-centered medical homes (PCMH) and Accountable Care Organizations (ACO). These models are being developed with the expectation that healthcare professionals will be expanding their focus to understand, address, and improve the health of populations. The principles and criteria for receiving the designation as a PCMH require that practices provide evidence that they are identifying and addressing the needs of the populations of patients registered in their practices. The principles of the PCMH include population management, improved access to care, practice-based team care, comprehensive care, patient self-management, uses of health information technology to deliver care and measure performance, communication with providers and patients, provision of evidence-based care, decision-making

shared with patients, cultural competency, quality measurement and improvement, and new payment systems (Berenson, Devers, & Burton, 2011).

It is anticipated that successful ACOs will be built on a strong primary care foundation that will likely consist of many PCMHs. An ACO may also include one or more hospitals, primary care and specialty care outpatient facilities, and other programs such as long term care and home care services. A fully-functioning ACO would be accountable for the cost and quality of care for a defined population (Centers for Medicare & Medicaid Services, 2013; DeVore & Champion, 2011; Crosson, 2011). The effective introduction of ACOs increases the likelihood of achieving the “triple aim” of improving the experience of care, improving the health of populations, and reducing the costs of healthcare (Berwick, Nolan, & Whittington, 2008).

Community health workers (CHW) represent an example of re-emerging and increasingly important members of the healthcare workforce who can contribute to improving the health of populations and the success of PCMHs and ACOs. CHWs are often drawn from the geographic community where many of a practice’s patients reside. They are familiar with the community and its culture and can help in their role as advocates for improved health and healthcare services for those patients with whom they work. Identifying and training members of the community to be CHWs, who have a presence both in the clinical practice facility and in the community, can help improve the quality and reduce the cost of care by increasing patients’ understanding of and adherence to the recommendations of their healthcare providers. CHWs can also share valuable insights about patients with clinicians that can contribute to improving the quality of and response to the care the practice provides (Rosenthal, et al., 2010).

Direct input from the populations being served is an essential component of both PCMHs and ACOs. The application of the principles of community-oriented primary care (COPC) can provide valuable information and perspectives to those who seek to understand and address the needs of populations, both in clinical practice and in the community. COPC had its origins in Israel and South Africa, but it has not emerged as a prominent model for healthcare delivery in the United States. Lack of reimbursement incentives for outreach to communities to improve care for populations has inhibited the growth of COPC in the United States. The provisions of the ACA are now encouraging and reimbursing clinicians for addressing the health needs of populations. The application of the principles of COPC by those involved with PCMHs and ACOs will enhance the prospect for success of these contemporary healthcare delivery models (Mullan & Epstein, 2002).

Connecting the Primary Care and Public Health Delivery Systems

The Institute of Medicine (IOM) has added its voice to calls for changes in the U.S. healthcare system. In a consensus report on the integration of primary care and public health, the IOM highlighted the importance of building a closer working relationship between the primary care and the public health delivery and education systems (IOM, 2012). Unfortunately, there has been insufficient collaboration between the primary care and public health delivery systems. The likelihood for success in improving the health of populations will be enhanced if a closer working relationship can be established.

Public health is defined as “...fulfilling society’s interest in assuring conditions in which people can be healthy.” Primary care is “the provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients, and practicing in the context of family and community.” Population health is “... the health outcomes of a group of individuals including the distribution of such outcomes within the group.” Populations can be communities, those served by clinical practices, persons with disabilities, senior citizens, ethnic groups, individuals with chronic diseases or individuals living in poverty (IOM, 2012).

The IOM report identified the following five principles for successful integration of primary care and public health: (1) a shared goal of population health improvement; (2) community engagement in defining and addressing population health needs; (3) aligned leadership; (4) sustainability; and (5) the sharing and collaborative use of data and analysis. These principles represent a framework for accelerating progress toward achieving the nation’s population health objectives through increased integration of primary care and public health services (IOM, 2012).

Dr. J. Lloyd Michener, an IOM Committee member, shared information about the IOM’s findings on population health at the ACICBL Committee meeting in April 2012. He noted that “There are a large number of public and private entities across the nation working on improving population health. It takes a concerted, coordinated effort to accomplish this goal.” He added, “HRSA health centers should be partnered with local health departments around understanding and improving population health in their local communities. They need to be training their teams of health providers including medical groups and public health groups in effective techniques for improving population health.”

Increasing Utilization of Communication and Data Technologies in Healthcare: Electronic Health Records (EHRs) and Health Information Exchanges

The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 provides the U.S. Department of Health and Human Services with the authority to establish programs to “improve healthcare quality, safety, and efficiency through the promotion of health information technology, including electronic health records and private and secure electronic health information exchange” (HealthIT.gov, *Policymaking, regulation, & strategy*, n.d.). Among the provisions of the HITECH Act are financial incentives that are designed to reward clinicians for acquiring and recording information in their EHR systems that provide evidence of improvement in the health of the populations they are serving. Providers will receive this higher level of reimbursement from the Centers for Medicaid & Medicare Services (CMS) when they document that they are achieving “meaningfully use” of their EHR systems. Specifically, providers should be using aggregate data from their records to document achievement of a specified number of CMS-defined population health-related objectives. It is anticipated that the health of the U.S. population will improve as a result of this new initiative that rewards clinicians for assuming a population health focus in the care they provide.

An important feature of a certified EHR is that the health data contained within it can be made available and accessed through regional and, eventually, a national health information exchange

(HealthIT.gov., *Compatibility and information exchange, health information exchange*, n.d.). EHRs and health information exchanges are designed to accomplish a number of goals that are consistent with a population health focus: (1) Care coordination: EHRs allow patient information to be shared among clinicians' offices and across health systems. This gives providers access to information needed to diagnose problems earlier and improve patient outcomes. (2) Population and public health: Providers will be able to document and track health outcomes of the populations they serve. (3) Patient involvement: Patients can more easily have access to their health records. (4) Safety and efficiency of healthcare: EHRs provide multiple safety checks, as well as identifying duplication of efforts (HealthIT.gov, *EHR incentives and certification*, n.d.).

Web-Based Information and Communication

Building on recommendations in the 11th Annual Report of the ACICBL, as well as mandates in the ACA, Healthy People 2020 objectives, and CMS Quality of Care Indicators, this report supports use of a wide variety of approaches and platforms for the education and training of health professionals. The Internet provides instant access to health information, evidence-based clinical pathways to guide care, and an ever-increasing array of communication platforms that may be used to enhance the care of individuals and populations. Technology has not only increased the capacity of patients and providers to communicate important health information, but it also provides a mechanism for all healthcare providers to have ready access to population-level social and behavioral information that can be used to improve care and the provision of preventive services for patients.

Email: Clinicians are increasingly using email to communicate with individual patients. Email can also be used to convey information in a convenient, inexpensive, timely manner to populations regarding specific health issues. For example, email notification can be sent to patients informing them when and where they can obtain annual influenza vaccines (Ahlers-Schmidt, et. al, 2012).

eHealth Portals: eHealth portals give patients access to a secure web-based network that contains the patient's health information, including recent lab results, reminders for follow-up appointments, health risk assessments, and links to healthcare and prevention web sites (Chapman, Rowe, & Witte, 2010). As emphasized in both the ACA and Healthy People 2020, improved access to reliable and relevant health information is vital for improving health literacy and empowers individuals and populations, such as groups of patients with chronic conditions, to self-manage and reduce their risk of complications.

Social Media: Healthcare systems and primary care settings use social media to confirm patient appointments and post patient medical status updates on web-based platforms that can be accessed by patients in a variety of settings. These media provide immediate access to primary and preventive healthcare information for millions of regular users. Social media has the potential to "shift the locus of control to patients and to change the relationship between patients and their healthcare providers" (Hawn, 2009).

Mobile Applications

Text messaging: Text messaging is a tool that can be used for patient reminders. Text messaging can remind patients to take medications, refill prescriptions or to access their medical records. It can also be used for general appointment reminders. Fifty parents were surveyed and asked how they would like to receive reminders for their children's immunizations. Forty-nine of the 50 parents were interested in receiving immunization reminders by text message, and all of the parents wanted to receive general appointment reminders using this social media tool (Ahlers-Schmidt, et al., 2012).

Other Mobile Applications: Currently, there are more than 30,000 healthcare and health information applications that are available for mobile phones and other messaging devices (American Telemedicine Association, 2013). The public increasingly turns to mobile devices for healthcare and instant health information. Providers must be proficient in the use of this technology for reaching the patient populations under their care.

Telemedicine/Telehealth

Telemedicine is defined by the American Telemedicine Association (2013) as the use of medical information exchanged from one site to another via electronic communications to improve patients' health status. Closely associated with telemedicine is the term "telehealth" which is often used to encompass a broader definition of remote healthcare that may or may not involve clinical services.

There are 200 telemedicine networks serving approximately 2,000 medical institutions in the United States (American Telemedicine Association, 2013). Of these 200 networks, it is estimated that 100 provide direct patient care and are currently using some form of telemedicine. Telehealth platforms range from telephonic links to Interactive Televideo (ITV) that allow face-to-face interaction. These platforms are used for numerous activities ranging from direct patient care to education. Telehealth applications can play a critical role in population health, particularly for populations in rural or remote areas and for those with unstable health conditions that require close monitoring by a health professional. Examples for the use of telehealth applications include the following (American Telemedicine Association, 2013):

- **Telemedicine/Telehealth consults** entail point-to-point connections using private ITV networks. These are used by hospitals and clinics to deliver both primary care and specialty services. Radiology, mental health, nutrition, speech and hearing, and intensive care services are among the services being provided using ITV.
- **Primary or specialty care to the home connections** involve connecting primary care providers, specialists, and home health nurses with patients over a single phone line or phone video systems for interactive clinical consultations.
- **Home to monitoring center** links are used for cardiac, pulmonary or fetal monitoring and home care and related services that provide care to patients in the home. The Internet and regular phone lines are used to transfer patient health information to monitoring centers.

They allow providers to interact verbally and sometimes visually with patients in their homes.

- ***Web-based e-health patient service sites*** provide direct consumer outreach and services over the Internet. Under telemedicine, these include sites that provide direct patient care (American Telemedicine Association, 2013).
- ***The Web and ITV for education*** are becoming increasingly important as providers have less time to travel long distances for continuing education. The Web and ITV are also allowing students who live in rural areas or assigned to clinical sites in rural areas to attend classes at distant academic institutions and receive remote supervision from faculty. Further, the Web and ITV are increasingly being used to broadcast health education to populations in rural and remote areas who may have little access to accurate and reliable health information.

Population Health and Health Professional Education

The changes currently underway in healthcare require that providers become knowledgeable about the new structures and requirements for healthcare delivery. They must become proficient in the use of the technologies that are becoming increasingly crucial for providing effective and efficient care to individuals and populations. It is also imperative that current and future healthcare providers understand population health and become competent in identifying and addressing the healthcare needs of populations.

Many health professions programs and schools provide a course in public health or population health, but most fall far short of providing students with the necessary knowledge and skills to effectively address the health needs of populations. Relatively few schools provide students with interprofessional clinical experiences that allow them to learn about the contributions different professionals bring to population health. Schools must teach students how they can work together in teams to address the complex issues encountered when providing care to populations.

It is very important for curricula in population health to address the personal, environmental, and social factors that affect defined populations. A population health strategy considers, for example, the needs of groups of people, whether they represent the inhabitants of a geographic area; age, gender or cultural group; patients with specific health conditions in a clinical practice; and patients in a hospital system. The following key elements of a population health approach can serve as a guide to content and skills needed for integration into health professional education (Health Canada, 2001):

Focus on the health of populations: It is imperative that healthcare providers understand how the health of the individual and populations is impacted by multiple individual, social, and environmental factors. The effective care of populations requires an organized interprofessional team that implements programs and interventions designed to understand patient behavior, build community trust, and improve patient outcomes.

Address the determinants of health and their interactions: Many factors influence the health of an individual and ultimately the health of a population. These factors may be biological, behavioral, social, economic or environmental. Healthcare professionals must be knowledgeable and competent in caring for all people, including those whose culture, language, economic status, age, and/or education result in health disparities, chronic disease, and poor health outcomes. Particular attention must be given to those populations who experience health disparities and negative health impacts related to the determinants of health. Dr. James Mason, Executive Director of Culturally Competent Care Giving for the Providence Health Service explained, “In teaching population health, let's try to find ways to build bridges between healthcare professionals and the community. I think that is our only answer if we are going to deal with health disparities and move effectively into the 21st century” (James Mason, personal communication, November 8, 2011).

Base decisions on evidence: Appropriate and effective healthcare requires decisions based on evidence. Evidence regarding the effectiveness of treatment strategies or interventions can only be determined by examining outcomes of care across a population. Healthcare providers must be knowledgeable about health indicators at the individual level, as well as, at the level of patient populations. They must have the knowledge and resources to collect and analyze data in meaningful ways.

Increase upstream investments: Providers must make decisions about the best investments of time and money when serving patient populations. It is no longer acceptable to focus on treating conditions without addressing at some level the behavioral, social, economic, and environmental factors that contribute to those conditions. Providers must make decisions about ways to produce the best outcomes for their patients in collaboration with other healthcare providers, the public health sector, and other entities that can address the factors that contribute to poor health and inequities in healthcare. This requires knowledge of the expertise and contributions of others inside and outside the traditional healthcare system.

Apply multiple strategies: Multiple factors influence the prevalence, distribution, and impact of illness in a population. Some health determinants fall within the expertise of healthcare providers and others fall outside the purview of the healthcare system. Healthcare providers must be aware that a variety of strategies may be needed to address a health issue and be willing to collaborate with resources outside of the healthcare field to effectively address the factors that impact a given health condition. Effective strategies may require knowledge and skills not currently taught in health professions education programs, such as community development or mass communication.

Collaborate across sectors and levels: Just as multiple strategies may be necessary to alter a particular health determinant, diverse sectors may also need to work in a coordinated interprofessional manner to affect change. Not all skills need to be part of the education of a health professional. However, all health professionals need to be knowledgeable about the profession, occupations, groups or entities that have the necessary resources and skills to address population health issues and ways to collaborate with them. These may be sectors within the healthcare system or governmental, voluntary, for-profit or non-profit sectors that can bring expertise and resources to influence a particular health determinant. For example, collaborations

with those in educational, financial or political fields may dramatically increase the likelihood of successful interventions.

Employ mechanisms for public involvement: Public involvement may be needed at a variety of levels to affect change in a particular health issue. Some issues require more public involvement in the form of consultation. Consultation allows the input of stakeholder perspectives and may ensure greater buy-in from the public in accepting and instituting needed changes. To realize change in some factors that influence health, citizen engagement may be necessary. Communication is the first step in community involvement. Community involvement begins with accurate and understandable education and the provision of information to the public about a given health issue. Citizen engagement brings community members together with government representatives and others to work toward solutions to problems that involve societal level values and trade-offs. Today, all of these activities are facilitated and enhanced by the use of various communication technologies.

Demonstrate accountability for health outcomes: No single entity can assume full responsibility or credit for population health outcomes. The health conditions faced by populations are multifactorial and usually require multilevel coordinated interventions. All entities, including individual healthcare providers and interprofessional teams, need to be able to identify areas they can affect and be able to demonstrate short, intermediate, and long-term outcomes attributable to the interventions they employ. This means that healthcare providers need to be informed about how to access and interpret data that will help them measure and improve healthcare outcomes at the population level. It also means that teams must be able to recognize areas they are not able to affect and know whom to ask for assistance.

The incorporation of a focus on population health in health professions curricula is an excellent vehicle for strengthening interprofessional education and practice. The tenets of population health encompass collaborative and ongoing communication among health professionals to improve the health of population groups. In recent years, several health professions institutions have integrated population health into their curricula. Some of these successful programs include the Brody School of Medicine at East Carolina University; Cork University Dental School in Cork, Ireland; Stanford University; George Washington University School of Public Health; and Thomas Jefferson University. Curricular initiatives in these and many other institutions are varied. Common components include curriculum integration or “threading” within existing courses, specific courses (usually electives embedded within existing degree programs), and graduate degree programs specifically focused on population health. Common themes present in the curricula are the study of health and disease in a population as influenced by geographical, educational, cultural, political, socioeconomic or gender factors; definition of health problems and needs; identification of the means by which health needs may be met; and provision of health services required to meet the varied needs of an individual group.

These programs also offer excellent examples of strategies for increasing the competency of health professional students in population health. Approaches to actively involve students in population health included: (1) discussing case study scenarios based on practice issues related to special population groups; (2) working with information management/technology to involve students in population data collection, dissemination, and analysis; (3) providing students with

the opportunity to review different parts of the healthcare system and conduct screening and surveillance for diseases in such settings as the hospital and community; (4) involving students in accessing the latest relevant population health data with the aid of information technology; (5) having students participate in discussions focused on the ethics of resource allocation in healthcare, for example, different geographical areas (i.e. rural isolated vs. urban underserved) and the role of the healthcare professional in advocating for individual patients and population groups; and (6) placing students in a practice and/or in the community as part of a team that might include community health workers to promote health and health equity (Rosenthal, Brownstein, Rush, et al., 2010). The successful integration of population health curricular content occurred with “buy-in” from the faculty, support and commitment from institutional leaders, and inclusion into both didactic and clinical education. Embedding population health in the curriculum offers the potential to create synergies between educators and health service providers. Classroom education, virtual media, and experiential activities have been quite effective in helping to advance learning about population health concepts and principles.

Recommendations with Rationale

Recommendation 1: The ACICBL recommends faculty across all health professions schools and continuing education programs adopt and implement curricular changes that will equip future and current health professionals with the knowledge, skills, and tools to understand and effectively and efficiently address the health needs of populations by employing an interprofessional team approach.

Rationale: Effective education of current and future health professionals will be critical to the provision of quality healthcare to populations. Health professions educators will need to take a leadership role by developing or adapting population health content for use in their educational programs. A combination of didactic content along with case studies and practical application of population health concepts either in service to clinical practice populations or to residents in the community will be helpful when teaching population health. A partnership between health professions and public health educators will be useful when designing and assessing population health educational content and experiences.

Recommendation 2: The ACICBL recommends health professions accrediting bodies include language in their accreditation standards that will require health professions programs and schools to integrate significant population health content and interprofessional population health practice into the basic curriculum.

Rationale: Assuming that faculty and administrators are more likely to pay attention to what is inspected rather than what is expected, the accrediting bodies for health professions programs and schools will be critical to the successful integration of population health content into the curricula of health professions educational programs. The leaders of the accrediting organizations can be significant contributors to changing the paradigm of health professions education by inspecting the quality of each program's population health educational content during the accreditation process.

Recommendation 3: The ACICBL recommends licensing bodies include questions in their examinations that measure entering health professionals' understanding of population health and their ability to integrate population health strategies into practice.

Rationale: Licensure examinations just as accreditation standards will be important for advancing the teaching of population health. Those responsible for developing the questions for licensure examinations will play a significant role in increasing the prevalence of population health content in pre-licensure educational settings by including population health-related questions in the licensure examinations.

Recommendation 4: The ACICBL recommends that within the next two years, the Health Resources and Services Administration (HRSA) incorporate language into Title VII, Part D program funding opportunity announcements that encourages the inclusion of a population health focus in the curricula of health professions education programs. Such language should encourage both didactic and clinical learning experiences with a focus on interprofessional competencies across the educational continuum from entry level professional education through

continuing professional development. Areas to be included are content about, and experience with diverse populations with an emphasis on the principles of cultural competency in clinical practice. Consideration of the leading health indicators and the social and environmental determinants of health and use of multiple technological applications to promote positive population health outcomes should also be included.

Rationale: HRSA can make a significant contribution to advancing population health education by including language in Title VII, Part D funding opportunity announcements that requests incorporation of population health content, as appropriate. The wide range of learning opportunities made available to students as a result of this effort will help them acquire an understanding of the importance of population health.

Recommendation 5: The ACICBL recommends the establishment of, and support for, a national clearinghouse for population health-related educational resources that can be used by public health and other health professionals and degree granting and continuing education programs. The proposed title for this clearinghouse is the *National Resource Center for Population Health Education and Practice*. The creation of this clearinghouse should be encouraged by HRSA and supported through public and private resources.

Rationale: A national clearinghouse is needed to serve as the central repository for resources to support population health education and practice. This clearinghouse can provide access to a wide range of educational content that health professions educators can utilize when teaching population health to students and practicing clinicians. The utilization of the resources available from the clearinghouse can help programs meet their accreditation standards and equip their students with the knowledge to respond to questions on licensure examinations that relate to population health topics.

Summary

A focus on population health is needed to improve health outcomes in the United States and the healthcare delivery system itself. Population health content should be embedded within existing degree programs and new graduate degree programs. Health professions students, faculty, and practitioners must be provided with the knowledge and skills to address the health care needs of populations. Using the latest technologies in the education and training of health professionals will improve access to healthcare for underserved populations and enhance the capacity of individual providers and interprofessional teams to work at the intersection between individual and population healthcare.

The access to sophisticated technologic resources offers the opportunity to quickly acquire and analyze large quantities of data that can be used to understand and address the needs of populations. It is incumbent upon leaders in health professions education and continuing professional education to provide information about the value and importance of these resources critical to ensuring the best care possible for the largest number of people in the most efficient and effective manner.

The recommendations offered in this report have been developed with the recognition that changes in all levels of health professions education and the systems for providing care will be needed to achieve the goal of improved population health. This will be no small undertaking, but this worthy goal can be achieved with a collaborative spirit and a shared vision of the future.

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