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TEACHING POPULATION HEALTH: INNOVATIONS IN THE INTEGRATION OF THE HEALTHCARE AND PUBLIC HEALTH SYSTEMS

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ABSTRACT

Population health is a critical concept in healthcare delivery today. Many healthcare administrators are struggling to adapt their organization from fee-for-service to value delivery. Payers and patients expect healthcare leaders to understand how to deliver care under this new model. Health administration programs play a critical role in training future leaders of healthcare organizations to be adaptable and effective in this dynamic environment. The purpose of this research was to: (a) engage current educators of health administration students in a dialogue about the best practices of integrating the healthcare and public health systems; (b) identify the content and pedagogy for population health in the undergraduate and graduate curricula; and (c) discuss exemplar population health curriculum models, available course materials, and curriculum integration options. Authors conducted focus groups of participants attending this educational session at the 2017 annual AUPHA meeting. Qualitative analysis of the focus group discussions was performed and themes identified by a consensus process. Study findings provide validated recommendations for population health in the health administration curriculum. The identification of key content areas and pedagogical approaches serves to inform health educators as they prepare future health administrators to practice in this new era of population health.

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INTRODUCTION

Ensuring that members of society are healthy and reaching their full potential requires that the missions for both the public health and healthcare sectors be achieved. These missions are complementary in that public health aims to prevent disease and injury, promote health and well-being, and assure conditions in which people can be healthy. Healthcare aims to provide treatment that is timely, effective, and coordinated (IOM, 2012). However, the Institute of Medicine (IOM) elucidated in their 2012 report, *Primary Care and Public Health: Exploring Integration to Improve Population Health*, that the work of the public health system and the healthcare system “is often carried out in relative isolation” (IOM, 2012). The IOM further elaborates, “The traditional separation between primary healthcare providers and public health professionals is impeding greater success in meeting their shared goal of ensuring the health of populations” (IOM, 2012). Thus, in this pivotal report the IOM (2012) recommends that “the integration of primary care and public health could enhance the capacity of both sectors to carry out their respective missions and link with other stakeholders to catalyze a collaborative, inter-sectoral movement toward improved population health.”

Population health defined

Population health, according to the Centers for Disease Control and Prevention, is “an opportunity for health care systems, agencies and organizations to work together in order to improve the health outcomes of the communities they serve” (Centers for Disease Control and Prevention, 2018). The Canadian Federal, Provincial, and Territorial Advisory Committee on Population Health, defines population health as “the health of a population as measured by health status indicators and as influenced by social, economic, and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services” (Public Health Agency of Canada, 2012). Related to this definition is the well-referenced definition of population health as a concept of health by Kindig and Stoddart (2003): “The health outcomes of a group of individuals, including the distribution of such outcomes within this group.” Kindig and Stoddart (2003) suggest that the population of individuals can be explained and described in numerous ways (e.g., geographic regions, ethnic groups, employees) and that many determinants of health (e.g., social and physical environment, access to healthcare) have their biological impact largely at a population level. When measuring outcomes for population health, Parrish (2010), proposes that “an ideal population health metric should reflect a population’s dynamic state of physical, mental, and social well-being.”

Population health and healthcare

In its report, *Working Definition of Population Health*, the IOM (n.d.) clearly acknowledges the important role that nonclinical determinants of health (e.g., individual behavior, social environment, physical environment, access to healthcare, prosperity, etc.) contribute when measuring the health outcomes in a population. The IOM (n.d.) cautions against healthcare organizations using the term ‘population health’ to describe the clinical outcomes of patients enrolled in a given healthcare plan. Specifically, “defining population health solely in terms of clinical populations can draw attention away from the critical role that nonclinical factors such as education and income play in producing health” (IOM, n.d.).

This focus on population health now requires healthcare organizations and systems to implement population health management (PHM) approaches that consider the living environment and socioeconomic status of the patient, as well as provide access to preventive services for the population in their service area (HRET, 2014). Implementing such an approach represents a paradigm shift from the fee-for-service payment to a value-based system that will reward providers based on the health status of their patient profiles (HRET, 2014). The American Hospital Association (2012) states that a PHM approach has the potential to improve health by analyzing health outcomes within a population to identify factors that contribute to certain health outcomes, and develop, implement, and evaluate interventions that can modify determinants to yield a positive health outcome. The Health Research & Educational Trust (2014) explains that this “ecological model of health” can produce positive health outcomes by proactively addressing “upstream factors” that influence health. This approach can lead to an “improved population health [that] will ultimately decrease medical costs and allow hospitals to invest in prevention.”

Progression of population health

The Health Research & Educational Trust (2014) describes PHM as the “second curve” of healthcare transformation in the United States and identifies a series of approaches that will be instrumental in the success of its implementation. For example, it will be imperative to have a value-based reimbursement system that emphasizes payment linked to practitioner performance. This approach may utilize accountable care organizations, patient-centered medical homes, and care delivery systems that implement the Institute for Healthcare Improvement’s Triple Aim (HRET, 2014).

The authors previously engaged healthcare leaders on their respective academic advisory boards about defining population health and identifying essential concepts appropriate for healthcare administration students’ educa-

tion. The results of these respective focus groups indicated that graduates must be able to attain skills (e.g., analyze large datasets) and apply information to influence “the social determinants of health and [embrace] alternative ways of delivering healthcare to diverse populations” (2017). Thus, according to academic advisory boards, health educators must focus their teaching in four areas: defining population health; managing population health; managing data; and understanding the significance of the social determinants of health in achieving a healthy population and how to manage these determinants (Hooker et al., 2017). The research presented herein builds upon this initial work to more specifically identify the principles, pedagogy, and best practices in teaching population health to the next generation of healthcare administrators.

It is clear in this new era of population health that healthcare leaders will need to form relationships with entities they may not have had to prior to a PHM approach. For example, healthcare organizations should forge partnerships with local and state government, the business sector, educational institutions, and the faith-based community to help implement an “ecological model of health” (HRET, 2014). Health administration programs play a critical role in training future leaders of healthcare organizations to be adaptable and effective in this new age of population health. The purpose of this research was to: (a) engage current educators of health administration students in a dialogue about the best practices of integrating the healthcare and public health systems; (b) identify the content and pedagogy for population health in the undergraduate and graduate curricula; and (c) discuss exemplar population health curriculum models, available course materials, and curriculum integration options.

METHODS

At the 2017 annual meeting of the Association of University Programs in Health Administration (AUPHA), the authors presented an educational session titled *Teaching Population Health: Innovations in the Integration of the Healthcare and Public Health Systems*. Twenty participants, representing educators in undergraduate and/or graduate health administration programs across the country, attended the educational session.

Preceding the focus-group sessions, workshop facilitators presented a conceptual Population Health Management (PHM) framework developed by the Care Continuum Alliance (May, 2012) and provided several exemplary case examples. In addition, the faculty presenters shared information with the participants on PHM curriculum models, available population health texts and content commonalities, and curriculum integration options.

Following the pre-session presentation, the faculty presenters then divided the participants into four groups of five people each. Each participant received a worksheet to discuss and complete which inquired about six characteristics: name of the course in which population health was taught; the population health principles taught; three most significant concepts the participants strived to convey in their respective courses; name of the textbook used; other teaching resources (e.g., websites, videos, guest speakers); and the pedagogical methods implemented. Three faculty presenters (also lead authors) moderated individual group discussions, which lasted 25 minutes.

The authors transcribed each group's submitted and completed worksheet representing each contributing participant's response. A member in any group could elect not to participate. The use of code-recode and multi-coder procedures helped reduce bias in thematic analysis. Common qualitative processes included recognition of word repetitions, key words in context, metaphors and analogies, and connectors and relationships, all used to identify themes. These strategies represent established social science techniques for theme identification (Ryan & Bernard, n.d.). A second thematic analysis was performed by another lead author who was supplied the transcript of each focus group.

After thematic analyses were completed, the primary author combined them into a single document and then collated similar themes. Each of the other authors, in an iterative fashion, then reviewed the results until all authors reached consensus on the final themes that emerged from the data. The Institutional Review Board at the four universities involved in this work approved the study.

RESULTS

The four focus groups discussed and reported on six characteristics that represented their experience in teaching undergraduate and graduate students about population health in their respective curricula. Table 1 illustrates a summary of the information reported.

Table 1

Characteristics for teaching population health

Name of course	
Fundamentals of Population Health	Community Health Benefits and Assessment
Population Health for Health Managers	Population Health and Epidemiology
Population Health: Programs, Policy & Epidemiology	Population Health and Improving Policy and Practices
Managerial Epidemiology	AIDS and Emerging Infections
Population Health	Epidemiology
Population Health principles taught	
History and evolution of population health	
Measuring population health and health disparities (e.g., DALY, QALY)	
Social determinants of health and health disparities	
<ul style="list-style-type: none"> • Population health management • Primary care & prevention • Patient-centered medical homes, accountable care organizations • Chronic care management, community health workers, peer coaches • High cost/high need patients and triple aim • Telemedicine, eHealth 	
Evidence-based decision making	
Key sources of epidemiologic data	
Policy process at the state and federal level and the role it plays in establishing the laws and regulations that govern the US healthcare system	
The policy process for improving the health status of populations	
The difference between individual- and population-based strategies for improving health	
Organization of public health at the local, state, and national level	
Core functions of public health and essential public health services	
Types of population-based approaches to improve public health and how they are evaluated	
Advancing and promoting population health through health promotion and disease prevention strategies	
Population pyramids and demographic transition	
Community health needs assessment	
Program evaluation	
Research design	

Table 1, *cont.*

Three most significant concepts you strive to convey
Health disparities
Hospitals (and Primary Care Physicians) no longer can operate within their walls – community collaboration is key
Use data to drive decision making
<ul style="list-style-type: none"> • Community Health Needs Assessment • 30-day readmission reduction • Hotspotting
Advancement of population health through health promotion & disease prevention
The basics of the policy process and how to apply policy to improving the health status of populations
Measurement of population health and related challenges
Community benefits and the role hospitals play
Global burden of disease
Assess, examine, and formulate a solution to a public health or community health problem
Concept of causality
Continuum of care
Coordination of care
Textbook used
T. Kue Young. <i>Fundamentals of Population Health: Concepts and Methods</i> . (Second Edition, 2004). Oxford University Press.
Institute of Medicine. <i>U.S. Health in International Perspective: Shorter Lives, Poorer Health</i> . (2013). National Academies of Health.
Steven T. Fleming. <i>Managerial Epidemiology: Cases and Concepts</i> . (Third Edition, 2015). Health Administration Press.
Richard Riegelman and Brenda Kirkwood. <i>Public Health 101</i> . (Second Edition, 2015). Jones and Bartlett Learning.
David B. Nash, Raymond J. Fabius, Alexis Skoufalos, Janice L. Clarke, Melissa R. Horowitz. <i>Population Health: Creating a Culture of Wellness</i> . (Second Edition, 2016). Jones and Bartlett Learning.
Mary-Jane Schneider. <i>Introduction to Population Health</i> . (Fifth Edition, 2017). Jones and Bartlett Learning.
Rosemary M. Caron. <i>Population Health: Principles and Application for Management</i> . (2017). Health Administration Press.

Table 1, *cont.*

Other teaching resources used (e.g., website, video, guest speaker)	
<i>Unnatural Causes</i>	
<i>County Health Rankings</i>	
<i>Health Leads</i>	
<i>Project ECHO</i>	
<i>Camden Coalition</i>	
<i>Robert Wood Johnson Foundation</i>	
<i>Kaiser Family Foundation</i>	
<i>New York Presbyterian Regional Collaborative</i>	
<i>500 Cities Project</i>	
Schiller, J. S., Lucas, J. W., Ward, B. W., & Peregoy, J. A. (2012). Summary health statistics for US Adults: National health interview survey, 2010. <i>Vital and Health Statistics. Series 10, Data from The National Health Survey, (252), 1-207.</i>	
Epidemiology of multi-morbidity and implications for healthcare, research, and medical education: a cross-sectional study. <i>The Lancet, 380(9836), 37-43.</i>	
Volden, C., & Wiseman, A. E. (2011). Breaking Gridlock: The determinants of health policy change in Congress. <i>Journal of Health Politics, Policy and Law, 36(2), 227-264.</i>	
CDC Case Studies	
Ted Talks on relevant Population Health topics (e.g., Hans Rosling)	
Modules from Washington State University	
<i>Hippocrates: On Airs, Waters, and Places</i>	
Movies: <i>Outbreak, Contagion</i>	
Patient stories	
Service learning case studies	
Institute for Health Improvement and the Triple Aim	
Articles from <i>Population Health</i>	
Pedagogy (e.g., seminar, active learning, lecture, lab)	
Lecture	Group work
Discussion	Kahoot quizzing
Video, discussion, reflection	Synchronous lectures
In-class activities	Pre-recorded lectures
Guest speakers (health managers; local primary care practitioners who are alumnae; local physician collaborative)	Asynchronous discussion board
Course Facebook page	Mid-term and final exam
Co-teaching	Health policy brief development
	Community service learning

The authors identified themes that emerged based on the teaching of population health by these participants. There were four themes identified:

1. Pedagogy options such as type and style varied significantly. Participants frequently identified the use of guest speakers and community participation, media (e.g., simulations, videos, TEDx talks, websites), and team teaching.
2. Course perspectives included evidence of foci on managerial epidemiology, health equity along with quality of care, community engagement, social determinants of health, policy and advocacy, relevant delivery models, chronic care management, and an environmental perspective.
3. Significant variation was also apparent in the type and number of textbooks adopted. Also highlighted was the use of available databases along with government reports and foundation materials.
4. There was less of an emphasis on financial models and data analytics including management implications for healthcare providers (hospital, etc.) and practitioners. The authors noted that not all textbooks covered these concepts.

Based on these themes, the authors identified four types of skills that instructors of population health courses should consider important when teaching content and application: (1) explaining health disparity and methods utilized to ensure health equity; (2) measurement and interpretation of data; (3) comprehension of the social determinants of health and methods to influence them; and (4) awareness of the changing landscape of healthcare and the role of population health in this dynamic environment.

The authors also presented sample population health curriculum models that could serve as exemplars (Table 2). These examples presented a range of curriculum models from a master-level population health degree to undergraduate case studies appropriate for multiple disciplines. Given that the focus group participants represented diverse degree types ranging from MHA to MPH to MBA at the graduate level and various undergraduate degrees, the options presented in Table 2 provide frameworks suitable for a wide variety of programs. The flexibility for integrating population health management for AUPHA-certified programs also offers participants alternatives appropriate for online, hybrid, or on-campus formats. Participants also provided individual program evidence highlighting the use of several exemplar model frameworks including case studies, degree and certificate programming, learning domains, and inter-professional collaborations within courses.

Table 2

Sample exemplar Population Health curriculum models

Model	Type	Characteristics
<i>Population Health</i> Thomas Jefferson University School of Medicine http://www.jefferson.edu/university/population-health/degrees-programs/population-health.html	Degree/ Certificate	39-credit degree (13 courses, Capstone) 18-credit certificate
<i>Clinical Prevention & Population Health Curriculum Framework</i> https://www.ncbi.nlm.nih.gov/pubmed/15556746	Learning Domains	Comprehensive curriculum, 19 competencies Clinical Degrees (MD, DDS, RN, NP, DO, PharmD, PA)
<i>Health Systems Leadership</i> University of Memphis http://www.memphis.edu/sph/programs/health_systems_leadership_cert.php	Graduate Certificate	12 credits (4 courses: leadership & org. behavior, population health management, foundations public health, and health policy/systems)
<i>Teaching Population Health</i> Duke Univ./Dept. of Community & Family Medicine https://www.ncbi.nlm.nih.gov/pubmed/23524919 https://www.healthypeople.gov/sites/default/files/HP2020HealthEdAcrossHealthProf_9.09%20slides_0.pdf	Competency Map Approach	Framework with learning objectives for multiple learning levels (novice, intermediate, expert) Multiple disciplines
<i>Education for Health: A Vision of 2020 – New Educational Models for Pop Health Education</i> http://www.aptrweb.org/page/SuccessfulPractices	Case Studies	47 undergraduate Case Studies for multiple disciplines, Inter-professional education tailored
<i>Prevention Education: Academic Medical Center –University of Texas at Galveston</i> https://www.healthypeople.gov/sites/default/files/HP2020HealthEdAcrossHealthProf_9.09%20slides_0.pdf	Experiential Framework	PrimaryCare+ Program (MD, PA,PH) Four levels of progressive experiences

NOTE: From (Jefferson College of Population Health, (n.d.); *Education for Health: A Vision of 2020 New Educational Models for Population Health Education*, 2020; Allan, et al. 2004; Kaprielian, 2013; *Healthy People 2020 and Education for Health*, 2011; *Healthy People 2020 Spotlight on Health Webinar. Prevention and Population Health Education Across the Health Professions*. Rudkin, 2014. *Healthy People 2020 Spotlight on Health Webinar. Prevention and Population Health Education Across the Health Professions*. Melcher, 2014.

Lastly, findings from a review of recognized textbooks in the field revealed several topic commonalities: health systems and policy, epidemiology, population health management, health determinants, data and decision support, community integration, and health assessments (Appendix A). Participants shared diverse comments about textbook selections and mentioned several representative examples included in Appendix A. Overall, focus group members did not reach a single consensus recommendation for a text or textbook(s) for either undergraduate or graduate population health courses.

DISCUSSION

The current research shows that, while pedagogy varied significantly among the participants, there were a number of higher-order teaching methods represented including community-based participation and simulation. Based on the discussion, there was a clear emphasis on teaching about healthcare disparities, social determinants of health, and the changing landscape of healthcare delivery in the United States. While there was less importance of the financial implications, there was a perceived need for graduates to be able to measure and interpret data. The current instructors are covering the topics identified as important by leaders in healthcare administration (Hooker et al., 2017).

Pedagogy approaches related to population health vary tremendously among faculty in health administration graduate and undergraduate programs. The accrediting body of the graduate programs, the Commission on Accreditation of Healthcare Management Education (CAHME) emphasizes the use of higher-order teaching methods, as outlined in the revised Bloom's taxonomy (Anderson et al., 2001). This calls for greater use of experiential learning and active student involvement. While there is still a place for lecture (as noted by its continued use), there is increasing use of simulation, community research, and active student learning activities. In the current research, participants in the focus groups indicated the use of both experiential and community-based learning. Both of these options, whether used for undergraduate or graduate students, will increase the integration of these higher-order teaching techniques. Each focus group identified a diverse set of population health topics deemed important to cover in a course. There was a large emphasis placed on healthcare disparities and healthcare equity. This is not surprising since the health of a population cannot be improved without first understanding who is having the worst health outcomes and why. Healthcare management professors must teach their students about not only the current state of healthcare disparities but also strategies for eliminating these disparities. This is an important point since a population health management approach requires an understanding that demographic changes will alter the demand for healthcare services, as

well as a “realization that acute medical care is only one facet of maintaining and improving health” of populations (HRET, 2014).

The second topic area that came up frequently: the social determinants of health and their relation to health inequality and disparities. The current healthcare system is about treating disease after it has occurred, whereas the population health approach recognizes healthcare is only a small part of making a population healthy. Social factors like poverty and environmental factors have a bigger influence on longevity and quality of life (McGovern, Miller, & Hughes-Cromwick, 2014). This is why the United States is spending more on healthcare but falling behind many other countries on longevity and quality of life (Avendano & Kawachi, 2014).

Another major topic area noted by the focus groups was healthcare policy. Students need to understand the important part that healthcare policy can have on the health of populations. Healthcare leaders share advocacy responsibility for policy change. Students need instruction and practice on ways to advocate and develop policies and laws to affect significant changes in health behaviors.

The last group of topics all relate to changes in the healthcare delivery system. Without specific instruction focusing on alternative ways of delivering healthcare, students will lack the skills necessary to influence the emerging healthcare system. They must understand disease management and case management, and that hospitals and physicians are very expensive ways to deliver care, as appropriate care can often be delivered by non-clinicians with similar results. Understanding when the use of these non-traditional caregivers can be appropriate is a very important skill for future healthcare leaders. This is an important point as PHM approaches that could contribute to an improved health of the population include seamless coordination of care across all healthcare settings (e.g., hospital to rehabilitation facility to home healthcare to outpatient services); community outreach and health education efforts; and the establishment of collaborations with community partners (HRET, 2014).

There was very little agreement on a single textbook to teach population health, as healthcare leaders and academicians are just now defining the essential, population health topic areas. Additionally, the ever-changing directions of the federal government make it very difficult to develop a textbook that covers all of the appropriate topics. Many instructors used considerable supplemental material from different Internet sources and journals.

Both the previous research of healthcare leaders and the current research of healthcare management instructors have emphasized the importance of data management and analysis. Through the current research, focus group

participants identified a number of excellent sources of data that the authors summarized and catalogued. Students will need to actually work with data and be able to summarize what they have found. This experiential learning will help them be better prepared for their future careers.

CONCLUSION

The current research shows health administration faculty demonstrate a continued commitment to teaching population health in their programs. While there was no single best method for delivery of the information identified, a number of topics emerged as important in any course. These included healthcare disparities, social determinants of health, healthcare policy and advocacy, and the changing landscape of healthcare delivery.

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APPENDIX A

POPULATION HEALTH TEXT REVIEW MATRIX

Title:	<i>Population Health: Principles & Applications for Management</i>
Author:	Caron, R.
Publisher:	HAP/AUPHA
Date:	2017
Chapter topics:	Public Health: Organization/Function Epidemiology Descriptive Epidemiology Public Health & Healthcare Data Epidemiologic Measures Analytic Epidemiology Study Design Infectious Disease Epidemiology Population Health & Health Determinants Community Health Assessment Managerial Epidemiology: A Primer Population Health Improvement Principles of Population Health Management A Data-Driven Approach The Momentum Behind Population Health

APPENDIX NOTE: From Caron, 2017; Nash. et al., 2016; McAlearney, 2003; Esterhay, et al., 2014; Yale, et al., 2015; Kahan et al., 2014; Fos & Fine, 2005; Fleming, 2014.

Title:	<i>Population Health: Creating a Culture of Wellness</i>
Author:	Nash, D. et al., 2nd edition
Publisher:	Jones & Bartlett Learning
Date:	2016
Chapter topics:	<p>Population Health Promise</p> <p>The Spectrum of Care</p> <p>Policy Implications for Population Health: Health Promotion & Wellness</p> <p>Population Health Education</p> <p>The Political Landscape in Relation to the Health & Wealth of Nations</p> <p>Behavior Change</p> <p>Patient Engagement: Engaging Patients in the Care Process by Leveraging Meaningful Use Goals</p> <p>Behavioral Economics</p> <p>Health System Navigation: The Role of Health Advocacy & Assistance Programs</p> <p>Transitions of Care</p> <p>Healthcare Quality & Safety Across the Care Continuum</p> <p>Information Technology</p> <p>Decision Support</p> <p>Population Health in Action: Successful Models</p> <p>The Legal Implication of Health Reform</p> <p>Making the Case for Population Health Management: The Business Value of a Healthy Workforce</p> <p>Marketing and Communication</p> <p>Research & Development in Population Health</p> <p>Role of Comparative Effectiveness Research & Its Effect on Population Health</p> <p>The Future of Population Health at the Workplace: Trends, Technology, & role of Mind-Body & Behavioral Sciences</p>

Title:	<i>Population Health Management: Strategies to Improve Outcomes</i>
Author:	Scheck-McAlearney, A.
Publisher:	AUPHA/HAP
Date:	2003
Chapter topics:	<p>Population Health Management</p> <p>Defining Perspective & Populations for Management</p> <p>Targeting Individuals for Population Health Management</p> <p>Lifestyle Management</p> <p>Demand Management</p> <p>Disease Management</p> <p>Catastrophic Care Management</p> <p>Disability Management</p> <p>Integrating Population Health Management Concepts & Strategies</p> <p>Strategic Program Management</p> <p>Care Managers</p> <p>Physician Involvement</p> <p>Information Technology</p> <p>Leveraging Opportunities in Population Health Management</p>

Title:	<i>Population Health: Management, Policy, and Technology</i>
Author:	Esterhay, R., et al., 1st Edition
Publisher:	Convergent Pub
Date:	2014
Chapter topics:	<p>Introduction to Population Health</p> <p>Network Leadership – Improving Population Health through Networks of People & Organization</p> <p>Population Health Impact Assessment and Policy Development</p> <p>Under the Numbers: The New Demographic Realities & Future of Population Health</p> <p>Envisioning an Expanded Model of Population Health</p> <p>Changing Contest – Promoting Wellness through Systems & Policy Change</p> <p>Chronic Disease in US – Progress & Today’s Challenges</p> <p>Mental/Behavioral Health Services - Need for Renewed Focus</p> <p>Development in Population Health for Aging Population</p> <p>Building a Bridge to Nowhere: A Case Study of State Run Health Changes</p> <p>Using Terminology Standards to County Healthy & Sick</p> <p>Advancing Use of Personal Health Data; Info for Population Health</p> <p>Big Data, Analytics & Population Health</p> <p>The Future of Population Health Moving Forward w/ Networks, Policies & Innovation</p>

Title:	Clinical Integration. Population Health and Accountable Care
Author:	Yale, K. et al., 3rd Edition
Publisher:	Oxford University Press
Date:	2004
Chapter topics:	Intro: Defining Health, Population & Population Health Measuring Disease in Populations Measuring Health & Disease in Populations Modeling Determinants of Health Assessing Health Risks in Populations Designing Population Health Studies Planning Population Health Interventions Evaluating Health Programs for Populations Improving Health of Populations

Title:	<i>Health Behavior Change in Populations</i>
Author:	Kahan, S. et al., Editors
Publisher:	Johns Hopkins Press
Date:	2014
Chapter topics:	<p>Intro</p> <p>Conceptual Framework for Behavior Change</p> <p>Evidence & Ecological Theory in Two Public Health Successes for Health Behavior Change</p> <p>Extending the Ecological Model: Key Stakeholders & Organizational Partnerships</p> <p>Program Planning for Behavior Change Interventions</p> <p>Behavior Change at the Intrapersonal Level</p> <p>Behavior Change at the Interpersonal Level: Social Networks</p> <p>Behavior Change at the Environmental Level</p> <p>Evaluating Behavior Change Programs</p> <p>Tobacco, Alcohol, Substance Abuse, Obesity & Eating, Physical Activity, Unintentional Injuries, Workplace Injury, Violence, Sexual Risk, Clinicians & Behavior Change</p> <p>Behavior Economics & Incentives to Promote Health Behavior Change</p> <p>Complexity, Systems Thinking & Health Behavior Change</p> <p>Patient & Consumer Activation for Health Behavior Change</p> <p>Empowering Patient Communication</p> <p>Health Risk Assessment</p> <p>Chronic Conditions & Population Health Management for Health Care Systems</p> <p>Health Behavior Change in Persons with Depressive Disorders</p>

Title:	<i>Managerial Epidemiology for Healthcare Organizations</i>
Author:	Fos, P.J., Fine, D.J., 2nd Edition
Publisher:	Jossey-Bass
Date:	2005
Chapter topics:	<p>Epidemiology in Health Care Administration</p> <p>Description of Health</p> <p>Measurement of Health</p> <p>Designs for Studying the Health and Health Needs of Populations</p> <p>Standardizing Population Health Information</p> <p>Medical Management in Population Health Care</p> <p>Planning Health Care for Populations</p> <p>Population Health Outcomes and Quality of Care</p> <p>Marketing Health Care for Populations</p> <p>Economic Analysis of Health Care for Populations</p> <p>Expanding Emergency Health Care services</p> <p>Quality of Hospital Care</p> <p>Pediatric Inpatient Services</p> <p>Community Relations in a Hospital Service Area</p>

Title:	<i>Managerial Epidemiology Cases and Concepts</i>
Author:	Fleming, S., 3rd Edition
Publisher:	AUPHA/HAP
Date:	2014
Chapter topics:	Introduction to Managerial Epidemiology Infectious Disease Epidemiology Measuring and Interpreting Morbidity Healthcare Planning and Needs Assessment Quality of Care Measures Mortality and Risk Adjustment Descriptive Epidemiology, Person, Place and Time Epidemiology and Financial Management Cost Effectiveness Analysis Statistical Tools Case-Control Studies Cohort Studies Randomized Clinical Trials Clinical Epidemiology and Decision Making Cardiovascular Disease Human Immunodeficiency Virus Infection Alzheimer's Disease Epidemiology and Leadership