
SECTION I

PROVIDING
POPULATION HEALTH

Chapter

1

THE SPECTRUM OF CARE

**JAAN SIDOROV, MD, MHSA, AND
MARTHA ROMNEY, MS, JD, MPH**

Executive Summary

Population health—a strategy to address national health needs

Population health provides unique opportunities in applying overlapping and synergistic interventions to care for populations that can be defined by need, condition, or geography. While this approach to care continues to undergo rapid evolution, there is a growing consensus that it will be a key component in addressing the twin healthcare challenges of quality and cost. An important feature of population health is the application of modern and culturally competent patient engagement and communication strategies that promote self care. This includes mutually agreed-to goal setting and collaborative decision making that allow patients to identify and manage potential health risks or disease exacerbations early. When combined with ready access to a medical home supported by a healthcare team enabled with disease management approaches and health information technology and integrated in the local community, the literature suggests that clinically and statistically significant increases in healthcare quality and decreases in unnecessary utilization are likely to result. This “packaged” care approach cannot only be applied to populations defined by the presence of a chronic illness (such as diabetes mellitus or coronary heart disease), but also for groups of persons who would benefit from health promotion and disease prevention activities. Examples include employer- or insurer-based wellness, immunization, screening, and medication compliance programs. Population health also has significant potential to reduce health disparities and serve as a building block in U.S. initiatives to address national health needs through many state-based programs and the National Priorities Partnership, as well as the Healthy People programs.

4 Chapter 1 The Spectrum of Care

Learning Objectives

1. Define the concept and components of “population health.”
2. Identify determinants of health and their impact on health care.
3. Discuss the social and economic imperative of “health promotion.”
4. Define the concept “disease management” and understand the business case.
5. Identify the need for and value of integrating healthcare services in the community, including worksites and healthcare institutions.

Key Words

chronic care management
 disease management
 health determinants
 health disparities
 health promotion
 Healthy People 2020

National Priorities Partnership
 Patient-Centered Medical Home
 patient self-management
 population health
 prevention
 screening

INTRODUCTION

Population health is a framework that seeks to realign the healthcare delivery system, which is widely recognized as fragmented, ineffective, poorly managed, wasteful, and economically inequitable.¹ This chapter will describe the population health paradigm and its promise of refocusing the system on achieving improved clinical and economic outcomes, reducing disparities of care, diminishing the prevalence of chronic illness, and realigning public and private healthcare financing. Ultimately, population health initiatives seek to slow the upward trajectory of healthcare spending and “bend the curve.”

WHAT IS “POPULATION HEALTH” AND WHY IS THIS APPROACH NECESSARY?

Population health can be defined as a “cohesive, integrated, and comprehensive approach to health care that considers the distribution of health outcomes within a population, the **health determinants** that influence distribution of care, and the policies and interventions that impact and are impacted by the determinants.”² This approach calls for coordination of a variety of care interventions, including **health promotion, prevention, screening**, behavioral change, consumer education with a special emphasis on self-management, **disease management**, and **chronic care management**. Simultaneously, population health also seeks to eliminate healthcare disparities, increase safety, and promote effective, equitable, ethical, and accessible care.

Supporters of population health believe that increasing the quality of care will eventually lead to decreasing costs.¹ When possible, quality is founded on evidence-based

medicine that not only includes clinical data, but also economic and patient-centered outcomes. Other outcomes may include measures such as quality of life, quality-adjusted life years, patient satisfaction, caregiver satisfaction, and provider assessments.

From a clinical perspective, the population health paradigm requires that integrated care be focused on health promotion, illness prevention, and chronic condition management and be addressed in tandem with the active and engaged collaboration of the patient-consumers, along with public health resources and services. In fact, attention to **patient self-management** of chronic illness is based on an increasingly sophisticated approach to behavior change and patient education. Given the spectrum of cultural, language, education, and economic barriers to achieving equitable health care, behavior change management requires a tailored, multifaceted approach. Accordingly, population health seeks integration of its culturally appropriate clinical care interventions with community health resources. Accomplishment of such integration will create local synergies that lead to alliances with local public health efforts to promote well-being of populations in their communities.

The prevalence and incidence rates, as well as the predicted trends of chronic illness and associated projected economics are dire and underlie the need for better prevention and chronic care management. Data from 2006, reported by the federal government in collaboration with healthcare associations, reflect that heart disease was the leading cause of death among Americans, followed by cancers, cerebrovascular disease, chronic lower respiratory disease, and diabetes.^{3,4} The projected incidence for new and recurrent coronary attacks is 785,000 and 470,000, respectively.⁵ Annual rates of stroke, new and recurrent, are reported to be 795,000.⁵ The prevalence of hypertension in U.S. adults is estimated to be 74,500,000, and more than 35 million adults are reported to have total serum cholesterol levels ≥ 240 mg/dL.⁵ Overweight and obesity contribute to cardiac and metabolic conditions, as well as cancer, and these rates in adults and children continue to rise. According to the Centers for Disease Control and Prevention (CDC), in 2008, more than 26% of U.S. adults were obese and approximately 24 million had diabetes, with 5.7 million cases undiagnosed.⁶

The associated costs of chronic care and chronic care management are equally astronomical. In 2009, \$2.5 trillion was spent on health care, yet with more than 45 million consumers uninsured, expenditures are expected to increase to \$4.3 or \$4.4 trillion over the next decade.^{7,8} Additionally, in 2008 an estimated 90 million consumers with chronic disease spent \$1.8 billion for care and an increase to \$2.8 billion is projected for 2010.⁹ The costs of health care continue to consume a large percentage of the national gross domestic product (GDP), increasing from 16.2% in 2007 to 17.6% in 2009, and costs are projected to grow to 20.3% by 2018 without significant changes to our national approach to health and health care.⁸ The expected average annual national health expenditure growth is projected to rise faster than the GDP (6.2% per year compared to 4.1% per year, respectively), corresponding to \$4.3–4.4 trillion in healthcare spending by 2018.^{1,8} With 80% of healthcare spending dedicated to the treatment of chronic care and an increasing older population experiencing one or more chronic diseases, significant

6 Chapter 1 The Spectrum of Care

changes are critically needed to bend the spending curve. A population health approach promises to realign the health focus, priorities, education, training, and incentives from treatment to wellness for all U.S. healthcare consumers.

ATTRIBUTES OF THE POPULATION HEALTH PARADIGM

Time and experience have demonstrated that a healthcare delivery approach focused on individual care is limited by both the underuse and overuse of healthcare resources, resulting in diminished clinical quality and increased expense. Supporters of population-based care suggest their approach is a more effective and viable alternative. The population health paradigm integrates existing clinical delivery systems with public health-based models of care as the foundations for each of the components. Combining this focus with patient self-management represents a drastically different approach to care than that offered by traditional healthcare education, training, servicing, and resourcing. Individual states and private healthcare entities are adopting population health models that differ only in the details of care delivery. Endorsement of this overall framework requires national support for requisite legislative, policy, and economic changes that will be necessary for its widespread adoption.

Investments will be required to build infrastructure to support this paradigm, address the bases for health inequities, integrate healthcare services, educate providers and consumers, and realign the financing of care in the United States. As population-based care expands, many observers believe a growing body of evidence will emerge that demonstrates that this approach addresses the twin challenges of improving quality of care and reducing costs. How the attributes of population health combine will form the basis of local efforts aimed at eliminating disparities, improving quality, and bending the cost curve.

BOX 1-1 BASIC ATTRIBUTES OF A POPULATION HEALTH PARADIGM

- Patient-centered care
- An identified primary care provider (“medical home”)
- An interdisciplinary healthcare team to provide supportive services
- Knowledge and recognition about determinants of health and impact on population health and individual health
- Integration of clinical, public health, and community systems
- Utilization of evidence-based guidelines to provide quality, cost-effective care
- Provision of culturally and linguistically appropriate care and health education
- Implementation of interoperable cross-sector health information technology^{10,11}

COMPONENTS OF THE POPULATION HEALTH PARADIGM

The primary components of the population health paradigm are integrated health promotion and chronic illness disease management in the context of determinants of health. Health promotion can be defined as the provision of clinical and public health services to collaboratively address the impact of health determinants on consumers for the purpose of improving and sustaining the highest quality of well-being attainable. Disease management also relies on these integrated healthcare systems to apply evidence-based clinical guidelines to provide timely, quality, and cost-effective treatment, both in healthcare and worksite settings to minimize the severity, length, and costs of care associated with chronic illness.¹²

Both strategies seek to leverage those determinants of health that impact an individual's well-being. These determinants include not only individual factors such as gender, age, ethnicity, socioeconomic, and educational status, but also population-based factors.¹³ This latter group includes geographic locale, environment and occupation exposures, availability of secure and habitable housing, physical safety, degree of psychological and physical stress in communities, availability and quality of employment, economic stability and business opportunities, accessible and affordable quality preventive and disease management services, accessible nutritious foods, clean water, and areas for adequate physical activity.¹³ These determinants of health are ultimately key factors in causing inequities in prevention, screening, treatment, morbidity, and mortality.¹³ As a result, disadvantaged populations bear a greater burden of disease and experience higher rates of infant mortality, cardiovascular disease, diabetes, cancer, and HIV/AIDS.¹³

HEALTH PROMOTION

The World Health Organization defines health promotion as “the process of enabling people to increase control over their health and its determinants, and thereby improve their health.”¹⁴ Health promotion encompasses “activities ... to maximize the development of resilience to ... threats to health.”¹² Health promotion involves an integrated, collaborative patient-centric approach to assessing, promoting, and managing health through prevention, screening, education, behavior change, and patient self-care.¹⁰ The contributions of each strategy will be briefly described.

PREVENTION

Prevention consists of the interlocking and mutually supportive strategies and interventions aimed at the deterrence, early detection, and minimization or cessation of disease and injury at a population level.¹² With more than 50% of adult deaths associated with preventable disease and 80% of the U.S. healthcare expenditures attributed to treatment for chronic illness and associated complications, most policy makers, regulators, and politicians have recognized that the need for preventive care is paramount.¹⁵ An estimated

8 Chapter 1 The Spectrum of Care

95% of U.S. healthcare spending covers interventions to treat chronic illness, including many preventable diseases, compared to 5% budgeted for health promotion and prevention.¹⁶

Prevention activities are generally categorized as primary, secondary, and tertiary. Primary prevention involves interventions directed at preemptively preventing disease onset.¹⁷ Immunizations, seat belt use, safe sex, stress management, and cigarette and illicit drug avoidance are examples of evidence-based primary prevention interventions.^{18,19} Secondary prevention is the “early detection and swift treatment of disease ... to cure disease, slow its progression, or reduce its impact on individuals or communities.”¹⁷ Screening is a form of secondary prevention and includes interventions for detecting diseases such as colon, breast, and cervical cancers, as well as smoking cessation, weight loss programs, and the monitoring of body weight, blood pressure, and blood cholesterol levels.^{17,20} Tertiary prevention is aimed at slowing the progression of confirmed disease.¹² Examples of tertiary prevention include routine foot and eye examinations for diabetic patients and screening for abdominal aortic aneurysms among high-risk tobacco users.^{21,22} Numerous studies have demonstrated the efficacy of preventive measures in reducing the risks of chronic disease and mortality.²³ One telling example of this approach is the U.S. childhood immunization initiative, which has demonstrated the value of health promotion using a population health paradigm. While legislation, mandatory tracking, and incentives are not always necessary to ensure a cost-effective program, the collaboration and integration of health services, culturally and linguistically appropriate communication, education, care, tracking, reporting, and evaluation are all critical components of successful population health efforts.

Employers and health insurers have long recognized the value of wellness programs. While individual program components, resources, and funding vary, common population-based objectives are to maintain optimum employee health and to minimize disease and injury.¹⁸ The benefits to employers are direct (measured as expenses related to interventions such as medical treatment, medications, and hospitalizations) and indirect (manifested as increased employee productivity by decreasing presenteeism and absenteeism) cost savings.¹⁸ General interventions in these employer- and insurer-sponsored wellness programs include health risk assessments, health screenings, education and wellness coaching, and healthy behavior challenges.¹⁸

While the benefits are substantial, the short-term costs of preventive care are high.²⁴ In addition to cost, gaps in participation are common as a result of the traditional focus of health care on treating sickness, diminished access to and availability of preventive services, lack of insurance coverage, health illiteracy, and minimal integration between public and clinical health.²⁴ Telling examples of these shortcomings include smoking cessation programs and increasing the appropriate use of aspirin among persons at high risk for blood clotting. Both initiatives are comparatively inexpensive and can reduce cardiovascular risks, yet concerns about the value and cost-efficacy of prevention programs have been raised.²⁴

SCREENING

Screening is defined as the “presumptive identification of unrecognized disease or health risks by the application of tests or other procedures that can be applied rapidly.”²⁰ The efficacy of screening is based upon two measures of validity: sensitivity and specificity. The four potential outcomes associated with screening are: “true positive,” which reflects a positive test result in the presence of actual disease; “true negative,” which is a negative test result in the absence of disease; “false positive,” which means the test is positive in the absence of disease; and “false negative,” which indicates the test result is negative in presence of disease.”²⁰ When assessing the appropriateness of screening, healthcare providers should consider the distribution of disease, the evidence supporting screening and validity of available tests, the benefits and risks associated with the screening, the availability and costs of treatment, and the determination of whether evidence-based and eligibility criteria exist.²⁰

The benefits of screening include early detection of disease with potential opportunities to institute early treatment that, in turn, results in better health outcomes and lower morbidity, mortality, and costs.²⁰ For example, health risk assessments and measures of blood pressure, as well as weight/BMI, vision, hearing, blood cholesterol/lipid profile, bone density, environment exposure (e.g., lead, asbestos, and toxic) measurement, and diagnostic examinations to rule out cancers have demonstrated benefits and lowered costs.²⁰

There are also limitations and potential harms associated with screening—including costs; unnecessary tests, unneeded care, and associated risks based upon false positive results; as well as patient inconvenience and discomfort—to warrant evidence-based assessment of the appropriateness of screening for individual patients.²⁰ In addition, significant individual patient stress, harm, and death may result from test-associated complications or injuries, unnecessary interventions, and the failure to pursue further tests following a false negative result.²⁰

Screening programs are commonly included in employer-sponsored and health insurance plans. Measurements used for screening purposes may be offered to employees through their insurance benefit, as part of a worksite clinic, or through a special employee-based program that is combined with other wellness and prevention initiatives.²⁴ Employers promote, and most employees welcome, sharing the employees’ results with the employees’ primary care providers. The role of the primary care provider is to consider the needs of each consumer-patient and utilize additional age/gender-appropriate and evidence-based testing to prevent and minimize the impact of any newly detected illness.

BEHAVIOR CHANGE (HEALTH MANAGEMENT)

An estimated 30–60% of patients are not compliant with their physician-directed treatment or medication regimens.²⁵ Sixty-four percent of hospital admissions for congestive heart failure are associated with failure to take prescribed medications and only 7% of diabetic patients perform all self-care activities.²⁵ Urgent needs to reduce avoidable

10 Chapter 1 The Spectrum of Care

complications and costs associated with chronic disease suggest that modifying behavior is imperative and is an integral part of the population health paradigm.²⁵ Behavior change encompasses significant physical, emotional, habitual, and cultural factors that, in turn, influence health status. Population-based care seeks an interdisciplinary approach in which primary care providers collaborate with allied health staff to educate, support, follow up, and evaluate the efficacy of their treatment plans.²⁵ When paired with usual clinical care, behavior change interventions have demonstrated positive patient outcomes in cancer prevention; weight control; treatment of diabetes, hypertension, and lipid disorders; stress management; tobacco cessation; and alcohol moderation programs.²⁵

PATIENT SELF-CARE

Population-based care acknowledges that consumers are critically necessary partners in achieving good outcomes. Unlike traditional care models, in which patients are passive recipients of treatment, a growing body of research has repeatedly demonstrated that health status is improved through behavior change and patient self-care. Through culturally and linguistically appropriate education, skill training, and integrated public and private healthcare delivery systems, healthcare consumers can readily learn to care for themselves, and participate in goal setting and collaborative decision making.²⁵ Patient self-care also lowers the demand for follow-up care as a result of greater compliance with health-promoting behaviors, such as adherence to dietary restrictions and participation in wellness activities. Actively engaged patients also have an enhanced ability to identify potential health risks early, enabling them to address the risk themselves or through timely communication with their primary provider.²⁵

PATIENT-CENTERED MEDICAL HOME

The **Patient-Centered Medical Home (PCMH)** concept is a professionally endorsed, integrated, and collaborative healthcare delivery model centered on primary care to manage chronic illness, improve patient outcomes, and lower healthcare costs.¹¹ The PCMH model has been or is being implemented by government and private providers, including the Veterans Affairs Administration, UnitedHealthcare, Aetna, Humana, and CIGNA.²⁶ A growing body of evidence indicates that the PCMH is associated with the reduction of medical errors, improved quality of care, and increased consumer satisfaction.²⁶

The PCMH is rapidly emerging as a key component of population health management. In this model, the primary care physician is the consumer's primary point of contact and is charged with responsibility for coordinating health and disease management while ensuring that integrated clinical and community medical and psychosocial care is provided.¹¹ The primary care services of the PCMH are based upon evidence-based guidelines enhanced through decision support with emphasis on patient self-care and behavior change.¹¹ Interoperable information technology systems are necessary to integrate care across practices, sites, and healthcare systems enabling appropriate access to

medical records, e-prescribing capabilities, and disease registries.¹¹ Economic incentives and savings are realized through the monitoring, evaluation, reporting, and improvement of the quality of care and patient outcomes.²⁷

CHRONIC CARE MANAGEMENT AND DISEASE MANAGEMENT

Chronic care management is the integrated primary care health paradigm focused on improving the quality of care and management of illness through “self-management, clinical information systems, evidence-based clinical decision support, redesigned integrated healthcare delivery clinical and community systems, and policies.”^{28,29} Disease management is a “system of targeted coordinated population-based healthcare interventions and communications for specific conditions in which patient self-care efforts are significant.”^{10,30} Disease management seeks to reverse the skyrocketing incidence and prevalence of serious, costly, chronic illness through improving patient outcomes with quality and cost-effective care that includes the PCMH.^{10,31,32}

Chronic illnesses are taking a significant toll on the American population’s health and economy, affecting more than 133 million Americans and anticipated to increase to 157 million in 10 years.³³ At least half of the population experiences more than one chronic illness, consuming more than 75% of national healthcare expenditures.³³ With the exception of accidents, preventable diseases accounted for the greatest number of deaths in 2006: these include heart disease, cancer, cerebrovascular disease, chronic lower respiratory disease, and diabetes.⁴ More than half of the U.S. population is overweight and obese.⁵ Centers for Disease Control and Prevention (CDC) data reflect that the direct costs (treatment, diagnosis, prevention) and indirect costs (e.g., absenteeism, reduced productivity, lowered quality of life, limited activity) associated with overweight and obesity were \$92.6 billion, 50% of which was covered by the federal government.³⁴ The 2007 direct medical costs for asthma treatment were an estimated \$37.2 billion.³⁵ The prevalence of cancers exceeds one million, with associated mortality rates ranging from more than 40,000 to more than 160,000, respectively, for breast and lung cancers.⁴ Cardiac disease continues to be the leading cause of death in the United States. Americans experience an estimated 758,000 primary and 470,000 subsequent heart attacks annually.³⁶ Costs for treating cardiovascular disease and stroke exceed \$475 billion.³⁶ Annual deaths from diabetes exceed 73,000 with an associated economic burden greater than \$174 billion, including \$58 billion as “decreased national productivity costs.”³⁷

In response to the escalating prevalence of chronic illness and its associated economic burdens, many independent companies and health plans have implemented disease management programs. Such programs utilize evidence-based, patient-focused strategies across populations to change behavior through collaborative health care, education, coaching, and financial incentives and to increase self-care and compliance.^{10,18,38} In addition, the measurement and evaluation with improvement initiatives and the reporting of processes and outcomes must be defined and implemented to create and sustain disease management

12 Chapter 1 The Spectrum of Care

interventions.^{10,18} Implementation of user-friendly, interoperable information technology is an integral component to support this health paradigm.^{10,18} Employers and insurance health plans have demonstrated that these strategies increase productivity and decrease direct and indirect costs associated with chronic illness.²⁶ Many chronic care management strategies have been developed to combat obesity, coronary heart disease and heart failure, diabetes, chronic obstructive pulmonary disease, asthma, and cancer.^{10,30,31} In 2005, an estimated \$1.2 billion was directed by employers and health plans to disease management plans.^{30,39} As of 2009, more than 80% of large U.S. employers offer chronic care management programs to lower healthcare costs.^{34,39}

Evaluation of disease management programs produces mixed results. Some studies report improvements in congestive and coronary heart disease, diabetes, and depression.³⁰ In addition, programs are reported to increase productivity while decreasing absenteeism, presenteeism, and hospitalizations.²⁷ However, in many instances, the costs associated with implementing disease management programs can be considerable and may not always be immediately associated with reduced healthcare costs. As a result, the cost-effectiveness of chronic management programs remains an open question.^{30–32} Proponents of chronic care programs posit that increasing participation and measuring outcomes will improve cost-effectiveness. To address the need for demonstrating and validating the cost-effectiveness of chronic management programs, public and private health and quality organizations, including the Agency for Healthcare Research and Quality (AHRQ), National Committee for Quality Assurance (NCQA), Joint Commission, and DMAA: The Care Continuum Alliance, are developing clinical and financial outcome measurements to determine if there is a financial return on investment.¹⁹ Suggested outcome measures include healthcare utilization, clinical outcomes, healthcare including new comorbidity and pharmaceutical costs, and productivity measures.⁴⁰

ELIMINATING HEALTH DISPARITIES

Health disparities are defined as “differences in the incidence, prevalence, mortality, and burden of diseases, as well as other adverse health conditions or outcomes that exist among specific population groups, and have been well-documented in subpopulations based on socioeconomic status, education, age, race and ethnicity, geography, disability, sexual orientation, or special needs.”^{41,42} These subpopulations experience disproportionate burdens of illness as a result of the barriers imposed by discrimination as well as differences in culture, language, beliefs, and values leading to considerable social and economic burdens associated with poor quality of care and lack of access to affordable, quality primary care.^{41–43}

Disparities in health care, particularly for minority populations, are manifested in access to quality care, burdens of illness reflected in morbidity and mortality rates, life expectancy, and quality of life.^{41–43} Minority and ethnic populations, including African

Americans, Latinos or Hispanics, Asian Americans, Native Hawaiians, Pacific Islanders, Alaskan Natives, and Native Americans, residents of rural communities, children, the elderly, individuals with physical or psychological disabilities, and other disenfranchised populations, tend to live in lower socioeconomic communities with higher rates of violence and environmental exposures, work in jobs with greater occupational hazards, have less access to affordable nutritious foods, and have higher rates of uninsurance.^{41–43} These populations have less access to preventive and diagnostic care and treatment, resulting in higher rates of morbidities, emergency department utilization, hospitalizations, and mortalities.^{33,41,42} The Institute of Medicine's report, *Unequal Treatment: Confronting Racial/Ethnic Disparities in Health Care*, cited more than 175 studies documenting diagnostic and treatment disparities of various conditions among racial/ethnic populations, even when confounding factors (e.g., insurance and socioeconomic status, comorbidities, age, healthcare venue, stage of diseases) were controlled for in analyses.^{41,42} Specific examples include higher rates of hypertension, diabetes, breast cancer, cervical cancer, colon cancer, and cardiovascular diseases in African Americans; diabetes in Native Americans, Alaskan Natives, and Latino populations; and heart disease mortality in certain Asian American, Latino or Hispanic, and Native American groups.⁴⁴ Lower rates of immunization and higher rates of infant mortality have been reported in African American, Hispanic, and Native American populations.⁴⁴

Barriers to health care have been conceptualized as organizational, structural, and clinical, including lack of diversity in the healthcare workforce, lack of cultural and linguistic competency, health illiteracy, and inadequate access to and coordination of care.⁴¹ In practical terms, health disparities include a spectrum of factors that impact access, diagnostics, treatment, follow-up, and continuity of care. These barriers result in day-to-day inability to obtain prescription medications, prevent illness, and avoid hospitalizations or emergency room use, all of which lead to poorer clinical outcomes and higher costs.⁴¹ The population health approach integrates clinical and public healthcare approaches to explicitly address these cultural determinants of health through the targeted provision of appropriate services that seek to reduce the myriad barriers to care.

CULTURAL COMPETENCY

Cultural competency involves “acknowledg[ing] and incorporat[ing] [and] ... understanding the importance of social and cross-cultural influences of different populations' values, health beliefs and behaviors, disease prevalence and incidence and treatment outcome; considering how these factors interact with and impact multiple levels of health care delivery systems; and implementing interventions to assure quality care to diverse patient populations.”⁴¹ This requires the assessment of cross-cultural relations and barriers, expansion of cultural knowledge, and awareness of integration of health beliefs and behaviors.⁴¹

Sociocultural barriers to health care have been described as organizational, structural, and clinical, all of which contribute to disparities in health and care.⁴¹ Organizational

14 Chapter 1 The Spectrum of Care

barriers include inadequate diversity in institutional leadership and healthcare providers, workforce, limited clinic hours, and extended waiting for appointments and care.⁴¹ Studies have demonstrated correlations between consumer satisfaction and racial concordance with providers.⁴¹ Clinical barriers exist where healthcare providers lack knowledge and appreciation for differences in ethnic, religious or health beliefs, values, and culturally endorsed treatments.⁴¹ In clinical settings, even language differences without availability of interpreters (i.e., “monolingual” or “unilingual” education and patient information resources) create important structural barriers that significantly impede consumer understanding of assessments, diagnosis, care recommendations, the necessity of specialty referrals, and mutually agreed-upon compliance with treatments.⁴¹

In 2001, the U.S. Department of Health and Human Services’ Office of Minority Health published National Standards on Culturally and Linguistically Appropriate Services (CLAS).⁴⁵ The 14 CLAS standards were developed to assist healthcare organizations in developing a framework to respond to diverse patient populations, to support the elimination of ethnic and racial disparities, and to improve the health of all consumers.⁴⁵ The 14 CLAS standards address respectful treatment of consumers; implementation of culturally appropriate policies, goals, and programs; recruitment of diverse leadership and staff; ongoing training of employees; ensuring the availability of interpreters and patient materials; performing self-assessments; collaborating with patient and community organizations to implement CLAS-related activities; instituting grievance procedures; and compiling data on progress and innovations utilizing CLAS standards.⁴⁵

NATIONAL INITIATIVES ADDRESSING POPULATION HEALTH NEEDS

The federal government and prominent public–private collaborations have been active proponents and participants in establishing priorities, strategies, and funding for programs to address the most critical, pressing healthcare issues. Two of the most significant initiatives are the **National Priorities Partnership** and the Healthy People programs.

THE NATIONAL PRIORITIES PARTNERSHIP

The National Priorities Partnership (NPP) is a collaboration of 28 nationally influential public and private organizations, convened by the National Quality Forum (NQF) in 2008. Collectively, the NPP partners identified priorities and goals that addressed four major challenges facing the U.S. healthcare system: “eliminating harm, eradicating disparities, reducing disease burden and removing waste.”⁴⁶ The priority areas and designated goals are engaging patients and families to make decisions about and manage their care; improving the population’s health; improving the safety and reliability of the U.S. healthcare system; ensuring well-coordinated care throughout and among all healthcare entities; guaranteeing appropriate and compassionate care for those with terminal illness; ensuring the delivery of appropriate care; and eliminating unscientific and excessive care.⁴⁶

This partnership marks the first national effort that identified population health as an explicit priority.

HEALTHY PEOPLE INITIATIVES

The U.S. Department of Health and Human Services (HHS), through the Centers for Disease Control and Prevention (CDC), formally established national health priorities in 1979.⁴⁷ The Healthy People programs set national public health priorities for implementation over a 10-year period by national, state, and local entities. Periodic reviews are conducted to measure and report progress toward the goals.

The two overarching goals for Healthy People 2010 were (1) increasing quality as well as years of healthy life and (2) eliminating health disparities. To guide achievement of these goals, 10 Leading Health Indicators representing the major health concerns were identified. Twenty-eight focus areas with 467 objectives were established to serve as guides for public and private sector participants who were implementing initiatives aimed at improving the population's health.⁴⁷

The **Healthy People 2020** overarching goals are: “attaining high quality, longer lives free of preventable disease, disability, injury, and premature death; achieving health equity, eliminating disparities, and improving the health of all groups; creating social and physical environments that promote good health for all; and promoting quality of life, healthy development, and healthy behaviors across all life stages.”⁴⁷ Deliberation and consensus among experts and stakeholders will determine the current Leading Health Indicators, focus areas, and objectives, which will undoubtedly include the unmet needs identified in Healthy People 2010.

STATE-BASED INITIATIVES

All 50 states and the District of Columbia have been active participants in national initiatives, including the NPP and the Healthy People programs. In addition, individual states have implemented their own reforms to eliminate self-identified healthcare disparities, increase access to quality and cost-effective care, and improve healthcare delivery at manageable costs. Almost every state has developed Healthy People health plans.⁴⁸ Of note is Massachusetts, which was the first state to provide universal coverage for all residents in 2006.^{49,50} Approximately 97% of Massachusetts residents are insured, reflecting the lowest rate of uninsured residents in the United States.^{49,50} Insurance coverage is subsidized for residents earning less than 300% of the Federal Poverty Level, and low-cost insurance is offered to those ineligible for employer-sponsored coverage.^{49,50} Preventive services and prescription drugs are covered, and deductibles and out-of-pocket spending are capped.^{49,50}

Vermont has implemented the Blueprint for Health, which is a legislated chronic care management program incorporating policies and support for accessible, appropriate, and timely coordinated clinical and community care, self-management tools, and information

16 Chapter 1 The Spectrum of Care

technology.⁵¹ Vermont's plan has already yielded positive outcomes in each of these interventions.⁵¹ Wisconsin's 10-year state health plan, Healthiest Wisconsin 2010, focuses on increasing the percentage of insured citizens to 92%, reducing barriers to access, and building capacity for culturally sensitive prevention, screening, and referral.⁵²

CHALLENGES IN IMPLEMENTING A POPULATION HEALTH APPROACH

Most stakeholders in healthcare reform agree that the status quo cannot remain and that the time for implementing systematic change is now. The most pressing challenges related to implementing a population health paradigm fall into three broad arenas: clinical, policy, and business.

CLINICAL

Healthcare students and providers need to learn about incorporating healthcare promotion and prevention into the day-to-day flow of patient management. In addition, health behavior counseling that emphasizes self-care needs to be incorporated into primary and treatment care. Evidence-based models of care need to be expanded and used in the creation of clinical care guidelines that are readily accessible at the point of care and also inform health insurance coverage.

POLICY

A broad array of legislative, regulatory, and policy changes that economically and structurally support a health promotion or disease prevention delivery system needs to be enacted. In addition, legislative and regulatory changes will be needed to enable economically sound changes in versions of health insurance that improve access to chronic care, wellness, and prevention activities. Furthermore, legislative, regulatory, and policy changes are critically needed to increase the systemic quality of care and eliminate waste. Last but not least, the integration of community/public health and clinical care systems, as envisioned in the Patient-Centered Medical Home, need to be broadly promoted across the entire spectrum of care.

BUSINESS

As the use of health information technology continues to expand in the health sector, purchasers need to be critically aware of the business case for defining and implementing meaningful interoperable systems and data warehouses that support population health interventions across multiple healthcare settings. This is critically important to establishing the links between outcome measures, evaluation of competing healthcare interventions, and reimbursement for various services. This will enable the incorporation of mandatory reporting and improvement procedures that lead to continuous quality improvement and reducing the rate of healthcare cost inflation.

CONCLUSIONS

Population health is a dynamic approach to health care that consists of a variety of inter-related approaches; it ultimately seeks to simultaneously improve healthcare quality and optimize healthcare spending. At its core, population health advances patient self-care so that recipients are better able to work with the healthcare system to improve their health status, intervene early in any exacerbations of chronic illness, reduce the incidence complications, and rely on efficient and effective healthcare options. While there are other health reform efforts underway, population health promises to be a key component of the United State's—and possibly the rest of the world's—efforts to reduce chronic illness. Tying self-care to other ingredients, such as increasing the use of health information technology, promoting interdisciplinary healthcare teamwork, supporting community health organizations, adopting disease management approaches, and instituting primary care reform with the Patient-Centered Medical Home, has yet to be systematically developed as a strategy and remains a dynamic and exciting area of healthcare reform. Given the twin challenges of quality and cost, population health so far remains an important option in reducing the burden of chronic illness, promoting wellness, increasing prevention, reducing health disparities, and meeting our national healthcare goals.

STUDY AND DISCUSSION QUESTIONS

1. What is the definition of population health and what are its key attributes?
2. What are the determinants of a population's health status and what are the roles of health promotion and disease management?
3. What are the roles of behavior change and self-care in achieving population health outcomes?
4. How can population health address healthcare disparities?
5. How can population health assist in achieving goals of the national and state initiatives addressing population health needs?

SUGGESTED READINGS AND WEB SITES

READINGS

- Adler NE, Rehkopf DH. U.S. disparities in health: descriptions, causes, and mechanisms. *Annu Rev Public Health*. 2008;29:235–252.
- Barr VJ, Robinson S, Marin-Link B, et al. The expanded Chronic Care Model: an integration of concepts and strategies from population health promotion and the Chronic Care Model. *Hosp Q*. 2003;7(1):73–82.

18 Chapter 1 The Spectrum of Care

- Betancourt JR, Green AR, Carillo JE, et al. Defining cultural competence: a practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Rep.* 2003;118:293–302.
- Bodenheimer T. Helping patients improve their health-related behaviors: what system changes do we need? *Dis Manag.* 2005;8(5):319–330.
- Bodenheimer T, Chen E, Bennett HD. Confronting the growing burden of chronic disease: can the U.S. health care workforce do the job? *Health Aff.* 2009;28(1):64–74.
- Braveman P, Gruskin S. Defining equity in health. *J Epidemiol Community Health.* 2003;57(4):254–258.
- Carney PA, Eiff MP, Saultz JW, et al. Aspects of the Patient-Centered Medical Home currently in place: initial findings from preparing the personal physician for practice. *Fam Med.* 2009;41(9):632–639.
- Fraze SG, Sherman B, Fabius R, et al. Leveraging the trusted clinician: increasing retention in disease management through integrated program delivery. *Popul Health Manag.* 2008;11(5):247–254.
- Goetzel RZ, Ozminkowski RJ, Villagra VG, et al. Return on investment in disease management: a review. *Health Care Financing Rev.* 2005;26(4):1–19.
- Grandes G, Sanchez A, Cortada JM, et al. Is integration of healthy lifestyle promotion into primary care feasible? Discussion and consensus sessions between clinicians and researchers. *BMC Health Serv Res.* 2008;8:213.
- Musich SA, Schultz AB, Burton WN, Edington DW. Overview of disease management approaches: implications for corporate-sponsored programs. *Dis Manage Health Outcomes.* 2004;12(5):299–326.
- Rosenthal TC. The medical home: growing evidence to support a new approach to primary care. *J Am Board Fam Med.* 2008;21(5):427–440.
- Sisko A, Truffer C, Smith S, et al. Health spending projections through 2018: recession effects add uncertainty to the outlook. *Health Aff.* 2009;28(2):w346–w357.

WEB SITES

- The Centers for Disease Control and Prevention: <http://www.cdc.gov/>
- DMAA: The Care Continuum Alliance: http://www.dmaa.org/phi_definition.asp
- The DMAA Outcomes Guidelines Report Volume 4—User Agreement: http://www.dmaa.org/OGR_user_agreement.asp
- Health Reform Center of the New England Journal of Medicine: <http://healthcarereform.nejm.org/?query=rthome>
- Healthy People 2010: <http://www.healthypeople.gov/>
- The Kaiser Family Foundation: <http://www.kff.org/>
- National Business Coalition on Health: <http://www.nbch.org/>
- The National Coalition on Health Care: <http://nchc.org/>
- National Priorities Partnership: <http://www.nationalprioritiespartnership.org/>

The National Quality Forum: <http://www.qualityforum.org/>
 The Patient-Centered Primary Care Collaborative: www.pcpcc.net
 The US Preventive Services Task Force: <http://www.ahrq.gov/CLINIC/uspstfix.htm>
 World Health Organization: <http://www.who.int/en/>

REFERENCES

1. National Coalition on Health Care. NCHC white paper identifies more than \$1 trillion in cost-savings. Now it's time to put fiscal responsibility and patient well-being before profits. <http://nchc.org/issue-areas/cost>. Published 2009. Accessed October 15, 2009.
2. Kindig D, Stoddart G. What is population health? *Am J Public Health*. 2003;93(3):380–383.
3. Lloyd-Jones D, Adams RJ, Brown TM, et al. Heart disease and stroke statistics—2010 update: a report from the American Heart Association. *Circulation*. 2010;121:e46–e215. <http://circ.ahajournals.org/cgi/content/full/121/7/e46>. Accessed December 10, 2009.
4. Heron MP, Hoyert DL, Murphy SL, Xu JQ, Kochanek KD, Tejada-Vera B. Deaths: final data for 2006. *National Vital Statistics Report*. 2009; 57(14):1-135. http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_14.pdf. Accessed December 1, 2009.
5. Centers for Disease Control and Prevention. Heart disease facts: America's heart disease burden. CDC Web site. <http://www.cdc.gov/heartdisease/facts.htm>. Accessed December 18, 2009.
6. Highest rates of obesity, diabetes in the South, Appalachia, and some tribal lands: estimates of obesity now available for all U.S. counties [news release]. Atlanta, GA: Centers for Disease Control and Prevention; November 19, 2009. <http://www.cdc.gov/media/pressrel/2009/r091119c.htm>. Accessed December 18, 2009.
7. Kaiser Family Foundation. Kaiser Daily Health Policy Report. More large employers offer chronic disease management programs to reduce health care costs. Kaiser Family Foundation Web site. <http://www.kaiserhealthnews.org/daily-reports/2009/april/03/dr00057858.aspx?referrer=search>. Published 2009. Accessed October 15, 2009.
8. Sisko A, Truffer C, Smith S, et al. Health spending projections through 2018: recession effects add uncertainty to the outlook. *Health Aff*. 2009;28(2):w346–w357.
9. Frazee SG, Sherman B, Fabius R, et al. Leveraging the trusted clinician: increasing retention in disease management through integrated program delivery. *Popul Health Manag*. 2008;11(5): 247–254.
10. DMAA: The Care Continuum Alliance. DMAA definition of disease management. DMAA Web site. http://www.dmaa.org/dm_definition.asp. Accessed December 18, 2010.
11. Carney PA, Eiff MP, Saultz JW, et al. Aspects of the Patient-Centered Medical Home currently in place: initial findings from preparing the personal physician for practice. *Fam Med*. 2009; 41(9):632–639.
12. Starfield B. Basic concepts in population health and health care. *J Epidemiol Community Health*. 2001;55(7):452–454.
13. Gehlert S, Sohmer D, Sacks T, Minger C, McClintock M, Olufunmilayo O. Targeting health disparities: a model linking upstream determinants to downstream interventions. *Health Aff*. 2008;27(2):339–349.
14. World Health Organization. 6th Global Conference on Health Promotion. The Bangkok Charter for health promotion in a globalized world. World Health Organization Web site. http://www.who.int/healthpromotion/conferences/6gchp/bangkok_charter/en/. Published August 11, 2005. Accessed October 2009.
15. Shenson D. Putting prevention in its place: the shift from clinic to community. *Health Aff*. 2006; 25(4):1012–1015.
16. Kelley E, Moy E, Kosiak B, et al. Prevention health care quality in America: findings from the first National Healthcare Quality and Disparities

20 Chapter I The Spectrum of Care

- Reports. *Prev Chronic Dis*. 2004;1(3):1–5. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1253468/htm>. Accessed October 5, 2009.
17. Oleckno WA. Selected disease concepts in epidemiology. In: Oleckno WA. *Essential Epidemiology: Principles and Applications*. Long Grove, Ill: Waveland Press, Inc., 2002:30–31.
 18. Goetzel RZ, Ozminkowski RJ. The health and cost benefits of work site health-promotion programs. *Ann Rev Public Health*. 2008;29:303–323.
 19. Chapman LS, Pelletier KR. Population health management as a strategy for creation of optimal healing environments in worksite and corporate settings. *J Altern Complement Med*. 2004;10(Suppl 1):S-127–S-140.
 20. Durojaiye OC. Health screening: is it always worth doing? *Internet J Epidemiol*. 2009;7(1). http://www.ispub.com/journal/the_internet_journal_of_epidemiology/volume_7_number_1_24/article/health-screening-is-it-always-worth-doing.html. Accessed October 1, 2009.
 21. 2007 National diabetes fact sheet: general information and national estimates on diabetes in the United States [fact sheet]. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2007. <http://www.cdc.gov/diabetes/pubs/factsheet07.htm>. Accessed December 18, 2009.
 22. U.S. Prevention Task Force. Screening for Abdominal Aortic Aneurysm. Agency for Healthcare Research and Quality Web site. <http://www.ahrq.gov/CLINIC/uspstf/uspstf/uspstf/uspstf.htm>. Published February 2005. Accessed December 18, 2009.
 23. Cohen JT, Neumann PJ, Weinstein MC. Does preventive care save money? Health economics and the presidential candidates. *New Engl J Med*. 2008;358(7):661–663.
 24. Kahn R, Robertson RM, Smith R, Smith R, Eddy D. The impact of prevention on reducing the burden of cardiovascular disease. *Diabetes Care*. 2008;31(8):1686–1696.
 25. Bodenheimer T. Helping patients improve their health-related behaviors: what system changes do we need? *Dis Manage*. 2005;8(5):319–330.
 26. Rosenthal TC. The medical home: growing evidence to support a new approach to primary care. *J Am Board Fam Med*. 2008;21(5):427–440.
 27. Musich SA, Schultz AB, Burton WN, Edington DW. Overview of disease management approaches: implications for corporate-sponsored programs. *Dis Manage Health Outcomes*. 2004;12(5):299–326.
 28. Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness. *JAMA*. 2002;288(14):1775–1779.
 29. Wagner EH, Austin BT, Davis C, Hindmarsh M, Schaefer J, Bonomi A. Improving chronic illness care: translating evidence into action. *Health Aff*. 2001;20(6):64–78.
 30. Mattke S, Seid M, Ma S. Evidence for the effect of disease management: is \$1 billion a year a good investment? *Am J Managed Care*. 2007;12(12):670–676. http://www.rand.org/health/abstracts/2007/071210_mattke.html. Accessed October 15, 2009.
 31. Lewis A. How to measure the outcomes of chronic disease management. *Popul Health Manag*. 2009;12(1):47–54.
 32. Congressional Budget Office. An analysis of the literature on disease management programs. Congressional Budget Office Web site. <http://www.cbo.gov/ftpdocs/59xx/doc5909/10-13-DiseaseMngmnt.pdf>. Published October 13, 2004. Accessed October 15, 2009.
 33. Bodenheimer T, Chen E, Bennett HD. Confronting the growing burden of chronic disease: can the U.S. health care workforce do the job? *Health Aff*. 2009;28(1):64–74.
 34. National Center for Health Statistics. U.S. Mortality Data 2006. Centers for Disease Control and Prevention Web site. <http://www.cdc.gov/nchs/deaths.htm>. Accessed December 17, 2009.
 35. American Lung Association. Lung cancer fact sheet. American Lung Association Web site. <http://www.lungusa.org/lung-disease/lung-cancer/resources/facts-figures/lung-cancer-fact-sheet.html>. Accessed October 2009.
 36. American Heart Association. Cardiovascular disease statistics. American Heart Association Web site. <http://www.americanheart.org/presenter.jhtml?identified=4478>. Accessed December 18, 2009.
 37. American Diabetes Association. American Diabetes Association Web site. <http://www.diabetes.org/>. Accessed October 15, 2009.

38. Barr VJ, Robinson S, Marin-Link B, et al. The expanded Chronic Care Model: an integration of concepts and strategies from population health promotion and the Chronic Care Model. *Hosp Q.* 2003;7(1):73–82.
39. Medical News Today. More large employers offer chronic disease management programs to reduce health care costs. <http://www.medicalnewstoday.com/articles/145136.php>. Published April 6, 2009. Accessed October 15, 2009.
40. Goetzel R, Ozminkowski RJ, Villagra VG, et al. Return on investment in disease management: a review. *Health Care Financing Rev.* 2005;26(4):1–19.
41. Betancourt JR, Green AR, Carrillo JE, et al. Defining cultural competence: a practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Rep.* 2003;118:293–302.
42. Adler NE, Rehkopf DH. U.S. disparities in health: descriptions, causes, and mechanisms. *Annu Rev Public Health.* 2008;29:235–252.
43. National Association of Chronic Disease Directors. National Association of Chronic Disease Directors Web site. <http://www.chronicdisease.org/i4a/pages/index.cfm?pageid=1>. Accessed December 18, 2009.
44. Office of Minority Health. Disease burden and risk factors. <http://minorityhealth.hhs.gov/>. Accessed November 20, 2009.
45. Office of Minority Health. *National Standards for Culturally and Linguistically Appropriate Services in Health Care: Final Report*. Washington, DC: U.S. Department of Health and Human Service; 2001. <http://minorityhealth.hhs.gov/assets/pdf/checked/finalreport.pdf>. Accessed November 20, 2009.
46. National Priorities Partnership. *Aligning Our Efforts to Transform America's Healthcare: National Priorities & Goals*. Washington, DC: National Quality Forum; 2008. <http://www.nationalprioritiespartnership.org/uploadedFiles/NPP/08-253-NQF%20ReportLo%5B6%5D.pdf>. Accessed December 1, 2009.
47. U.S. Department of Health & Human Services. Healthy People 2020 Public Meetings: Proposed Healthy People 2020 Objectives. <http://www.healthypeople.gov/hp2020/Objectives/TopicAreas.aspx>. Accessed November 28, 2009.
48. Healthy People 2010. Websites for state Healthy People 2000 plans. Health.gov Web site. <http://www.health.gov/hpcomments/state/hpstate.htm>. Accessed December 19, 2009.
49. Office of Health and Human Services. Health-care Reform. Office of Health and Human Services Web site. <http://www.mass.gov/?pageID=eohhs2subtopic&L=4&L0=Home&L1=Government&L2=Special+Commissions+and+Initiatives&L3=Healthcare+Reform&sid=Eeohhs2>. Accessed December 18, 2009.
50. Massachusetts Trial Court Law Libraries. Massachusetts laws about health insurance. Commonwealth of Massachusetts. Trial Court Law Libraries Web site. <http://www.lawlib.state.ma.us.subject/about/healthinsurance.htm>. Accessed December 18, 2009.
51. Vermont Department of Health. Healthy Vermonters 2010. Vermont Department of Health Web site. <http://healthvermont.gov/pubs/hv2010/hv2010.aspx>. Accessed December 18, 2009.
52. Wisconsin Department of Health Services. Tracking the state health plan 2010: state-level data. Wisconsin Department of Health Services Web site. <http://dhfs.wisconsin.gov/statehealthplan/track2010>. Accessed December 18, 2009.

