

THE SPECTRUM OF CARE**JAAN SIDOROV AND MARTHA ROMNEY**

Executive Summary

Population health—a strategy to address national health needs.

Population health provides unique opportunities to apply overlapping and synergistic interventions to care for populations, which can be defined by need, condition, or geography. Although this approach to care is rapidly evolving, there is a growing consensus that it will continue to be a key component in addressing the twin healthcare challenges of improving 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. Such strategies include mutually agreed-upon goal setting and collaborative decision making to enable patients to identify opportunities to manage potential health risks or delay the onset of chronic conditions and their complications. The literature suggests that clinically and statistically significant increases in healthcare quality and corresponding decreases in unnecessary utilization are likely to result when populations have ready access to a medical home. A medical home is supported by a healthcare team that utilizes disease management approaches and health information technology (IT) that is integrated into the local community. This packaged care approach can be applied to both populations defined by the presence of a chronic illness (e.g., diabetes mellitus, coronary heart disease) and groups of people 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.

Learning Objectives

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

Key Terms

chronic care management

disease management

health determinants

health disparities

health promotion, prevention, and screening

National Priorities Partnership

patient-centered medical home

patient self-management

population health

INTRODUCTION

Population health is an organizing framework that seeks to align the components of the healthcare delivery system, which has been widely criticized as fragmented, ineffective, poorly managed, wasteful, and economically inequitable.¹ This chapter describes 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 improve health outcomes while “bending” or slowing the curve of the upward trajectory of healthcare spending.

WHAT IS POPULATION HEALTH AND WHY IS IT NECESSARY?

Population health can be defined as a “cohesive, integrated, and comprehensive approach to healthcare 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 those determinants.”² The Population Health Alliance, a trade organization representing many for-profit population health service providers, describes the population health model as having seven components: population identification, comprehensive needs assessment, health promotion programs, self-management interventions, reporting, separate feedback loops that involve the healthcare consumer, and ongoing evaluation of outcomes.³ In the context of a primary care practice, population health can be thought of as the use of clinical, demographic, and sociocultural information obtained from the patients served by the practice to improve care and clinical outcomes.⁴

Successful population health relies on the coordination of a variety of care interventions, which include **health promotion, prevention, and screening**; behavioral change; and consumer education with a special emphasis on self-management, **disease management**, and **chronic care management**. Simultaneously, population health seeks to eliminate healthcare disparities; increase safety; and promote effective, equitable, ethical, and accessible care.

Population health differs significantly from its predecessor, *disease management*.⁵ One key difference is a greater reliance on data warehouses and *registries* to facilitate the collection and analysis of data regarding health outcomes. These types of data storage serve as the basis for efforts to improve those outcomes over time.⁶ Once data are available, population health programs use a variety of mathematical or predictive models to *risk stratify* the population and identify patients with the greatest future vulnerabilities (e.g., declining health status, increased healthcare utilization).⁷ Finally, by means of technology support tools, incentives, and tailored communications, population health seeks to engage at-risk patients and their healthcare providers in a collaborative approach to fostering high-value *self-care behaviors*.⁸

Supporters of population health believe that increasing the quality of care will eventually lead to decreasing costs. By promoting healthcare interventions where they are most needed, advocates are confident that enhanced quality will, in turn, support the achievement of improved economic and patient-centered outcomes⁹ (e.g., enhanced quality of life; quality-adjusted life years; patient satisfaction; caregiver satisfaction; provider assessments; and reduced inpatient days, admissions, emergency department (ED) visits, and insurance claims expense).

From a clinical perspective, the population health paradigm requires that integrated care be focused on health promotion, illness prevention, and chronic condition management that rely on collaboration with active, engaged patient–consumers. In fact, improvements in **patient self-management** of chronic illness are the result of an increasingly sophisticated approach to behavior change and patient education that is based in *shared decision making*. Shared decision making is the term used to describe medical decisions involving interactions between patients and their providers that are informed by the best evidence and that reflect the individual patient’s well considered goals and concerns.¹⁰ By accommodating patients’ preferences and values, traditional physician autonomy gives way to mutual agreement on the goals of treatment.^{11,12} A growing body of evidence suggests that, in addition to greater satisfaction, shared decision making increases the rate of choosing more conservative treatment options over invasive surgery or certain types of elective testing.¹³ This approach to care often relies on non-physician healthcare professionals who, when teamed with physicians in primary care settings, solicit input from patients and advance greater patient centeredness.¹⁴

Given the spectrum of cultural, linguistic, educational, and economic barriers to achieving equitable health care, behavior change management requires a tailored, multifaceted approach. Accordingly, population health seeks to integrate its personalized and

culturally appropriate clinical care interventions with community health resources. Growing adoption of population health across multiple healthcare settings requires a high degree of patient care–team integration and alliances with local public health efforts that, in turn, promote well-being of populations in the surrounding community.

The prevalence and incidence rates, as well as the predicted trends of chronic illness and their associated economics, highlight the need for better prevention and chronic care management. The Centers for Disease Control and Prevention’s (CDC’s) summary of the burden of chronic illness in the United States documents a grim picture:

- Chronic diseases and conditions—such as heart disease, stroke, cancer, diabetes, obesity, and arthritis—are among the most common, costly, and preventable of all health problems.
- As of 2012, about half of all adults—117 million people—have one or more chronic health conditions. One of four adults has two or more chronic health conditions.
- Seven of the top 10 causes of death in 2010 were chronic diseases. Two of these chronic diseases—heart disease and cancer—together accounted for nearly 48% of all deaths.
- Obesity is a serious health concern. During 2009–2010, more than one-third of adults, or about 78 million people, were obese (defined as body mass index [BMI] ≥ 30 kg/m²). Nearly one of five youths age 2–19 years was obese (BMI ≥ 95 th percentile).
- Arthritis is the most common cause of disability. Of the 53 million adults with a doctor diagnosis of arthritis, more than 22 million say arthritis causes them to have trouble with their usual activities.
- Diabetes is the leading cause of kidney failure, lower limb amputations other than those caused by injury, and new cases of blindness among adults.¹⁵

With 80% of healthcare spending dedicated to the treatment of chronic care and an aging population experiencing one or more chronic diseases, substantial changes in our approach to healthcare delivery and financing will be necessary to reduce the year-after-year increase in healthcare spending. A population health approach will realign the health focus, priorities, education, training, and incentives.

ATTRIBUTES OF THE POPULATION HEALTH PARADIGM

A healthcare delivery approach focused on individual care is limited by both the underuse and overuse of healthcare resources, and results in diminished clinical quality and increased expense. The population health paradigm integrates existing clinical delivery systems with public health–based models of care as the foundations for each of the components (see Box 2-1). The introduction of patient self-management distinguishes the population health approach from traditional approaches to 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 the legislative, policy, and economic changes that will be necessary for its widespread adoption.

Investments will be required to build infrastructure to support the population health paradigm, address the bases for health inequities, integrate healthcare services, educate providers and consumers, and realign the financing of health care in the United States. As population-based care expands and the evidence accrues, many experts believe that the population health model will be proven effective in addressing the triple challenge of increasing quality of care, reducing costs, and improving the patient care experience.

BOX 2-1 BASIC ATTRIBUTES OF A POPULATION HEALTH PARADIGM

- Population identification
- Registry consisting of a searchable data warehouse
- Risk stratification modeling using patient surveys and health data inputs (e.g., insurance claims, electronic health record [EHR] information)
- Personalized, patient-centered care that includes self-management, shared decision making, health promotion, disease management, and case management
- An identified primary care provider (medical home)
- An interdisciplinary healthcare team to provide supportive services, including shared decision making
- Clinician knowledge about and recognition of determinants of health and their effect on population health and individual health
- Integration with 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
- Ongoing evaluation of outcomes with feedback loops
- Implementation of interoperable cross-sector health IT^{16,17}

Data from the Population Health Alliance (formerly DMAA: The Care Continuum Alliance). DMAA definition of disease management, and 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):632–9.

COMPONENTS OF THE POPULATION HEALTH PARADIGM

The primary components of the population health paradigm are integrated health promotion and chronic disease management. Health promotion is the provision of clinical and public health services to collaboratively address the effect of health determinants on consumers for the purpose of improving and sustaining well-being. Disease management also relies on these integrated healthcare systems to apply evidence-based clinical guidelines for personalized, timely, high-quality, and cost-effective treatment that is based on

level of risk. Health promotion and disease management can be offered both in healthcare and worksite settings, and both are ultimately intended to minimize the severity, length, and costs of care associated with chronic illness.¹⁸

Target populations can be identified on the basis of geography (e.g., the service area of a provider), insurance status (e.g., employer sponsorship), or the presence of a chronic condition (e.g., diabetes mellitus, hypertension). The identification process relies on a number of inputs, including health risk assessments (HRAs), assessments of willingness to change, insurance claims, EHR data, or public health statistics. Ideally, these data are stored in a registry, which is a searchable, secure data warehouse that facilitates the mathematical modeling used to assign a risk score to each individual in a population. Based on the level of risk and depending on individual preferences and goals, persons within the population are engaged in health promotion, disease management, or case management programs with links to public health and community-based health resources. Ongoing outcomes data collection may include quality of life assessments, satisfaction measures, specific clinical outcomes (e.g., blood pressure, diabetes testing and control, vaccination rates, referrals to community programs), and healthcare utilization as well as costs (e.g., hospitalization rates, ED visits, monthly insurance claims expense). These data can be used to compute summary statistics that assess the effect of the various health promotion and care management programs over time and inform program adjustments.¹⁹

These interlocking strategies leverage the determinants of health that affect an individual's well-being. Determinants include individual factors (e.g., gender, age, ethnicity, socioeconomic and educational status) and population-based factors²⁰ (e.g., geographic locale, environment and occupation exposures, physical safety, degree of psychological and physical stress in communities, economic stability, accessible and affordable quality preventive and disease management services, areas for adequate physical activity).²⁰ These determinants of health have an appreciable effect on inequities in prevention, screening, treatment, morbidity, and mortality.²⁰ 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.²⁰

HEALTH PROMOTION

The World Health Organization (WHO) defines health promotion as “the process of enabling people to increase control over their health and its determinants, and thereby improve their health.”²¹ Health promotion encompasses “activities . . . to maximize the development of resilience to . . . threats to health”²¹ and involves an integrated, collaborative patient-centric approach to assessing, promoting, and managing health through prevention, screening, education, behavior change, and patient self-care.²² As part of the national strategy to improve the health of all people through promotion of and increased access to care, Congress lowered the financial barriers to specific care and services. As of

January 1, 2014, the Patient Protection and Affordable Care Act (ACA) requires that all new health plans, both inside and outside of the Health Insurance Marketplace, cover a comprehensive package of items and services, known as essential health benefits.²³ Essential health benefits must include “ambulatory patient services; emergency services; hospitalization; maternity and newborn care; mental health and substance use disorder services, including behavioral health treatment; prescription drugs; rehabilitative and habilitative services and devices; laboratory services; preventive and wellness services and chronic disease management; and pediatric services, including oral and vision care.”²⁴

The ACA also established the first Prevention and Public Health Fund, with mandatory appropriations for “programs to improve health and help restrain the rate of growth in private and public health care costs.”²⁵ For fiscal years (FYs) 2010 through 2022, \$18.7 billion was mandated, with \$2 billion annually thereafter. The initial allocation was \$500 million in FY2010, with incremental increases up to \$2 billion annually beginning in FY 2015.²⁵ Since that time, in response to both fiscal and political concerns, funding of many of the public health provisions of the ACA has been significantly modified.^{26,27} How committed Congress and the administration remain to preserving the fund in the future remains an open question.

To set the national framework for prevention and health promotion, the ACA established the National Prevention, Health Promotion and Public Health Council (NPC).^{28,29} Chaired by Surgeon General Regina Benjamin, with representation from 20 federal departments, agencies, and offices, the NPC created the first National Prevention Strategy and NPC Action Plan. Based on a vision and a goal, four strategic directions (i.e., Healthy and Safe Community Environments, Clinical and Community Preventive Services, Empowered People, and Elimination of Health Disparities), and priorities supported by evidence-based recommendations, the National Prevention Plan is the foundation for national, state, and local prevention efforts.^{29,30}

Other prevention provisions support increased education, outreach, and access to clinical preventive services at the community level (e.g., school-based preventive services); additional health coverage for Medicaid³¹ and Medicare³² populations (e.g., annual wellness examination and designated preventive services); and encouraging value-based insurance design (VBID) to promote prevention and healthy lifestyles, to encourage adherence to recommended treatments, and to discourage use of low-value services.³³ For the past decade, employers across the country have been adopting VBID benefit plans to support healthier employees and dependents, and to reduce the costs associated with chronic illness from both health insurance and productivity perspectives.³⁴

PREVENTION AND WELLNESS

Prevention consists of supportive strategies and interventions aimed at the deterrence, early detection, and minimization or cessation of disease and injury at a population level.³⁵ Preventive activities and care are critical to the health of the nation’s population and

economy. Although 70% of adult deaths are attributed to chronic diseases and an estimated 75% of U.S. healthcare expenditures are associated with treating chronic illness, a mere 3% is budgeted for health promotion and prevention.³⁶ Healthcare costs related to chronic illness include both direct medical expenditures and indirect costs (e.g., absenteeism, presenteeism, workers' compensation, and other associated labor costs).

Prevention activities are generally categorized as primary, secondary, and tertiary. Primary prevention involves interventions directed at preemptively preventing disease onset.³⁷ (e.g., immunizations, seat belt use, avoiding tobacco use).^{38,39} 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."³⁷ Screening is a form of secondary prevention and includes interventions for detecting diseases and high-risk behaviors associated with chronic illness (e.g., obesity, smoking, excessive alcohol consumption, illicit drug use).^{37,40} Tertiary prevention is aimed at slowing the progression of confirmed disease³⁷ (e.g., routine foot and eye examinations for diabetic patients).^{41,42} Numerous studies have demonstrated the efficacy of preventive measures in reducing the risks of chronic disease and mortality.⁴³ An excellent example of this approach is the U.S. childhood immunization initiative. 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.

General interventions in employer- and insurer-sponsored wellness programs include health risk assessments, health screenings, education and wellness coaching, and healthy behavior challenges.³⁸

Although the health benefits are substantial, the short-term costs of preventive care are high,⁴⁴ and gaps in participation are common as a result of the traditional focus on sick care, diminished access to and availability of preventive services, lack of insurance coverage, health illiteracy, and minimal integration between public and clinical health.⁴⁴ 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.³⁶

Over the past decades, different models of employee wellness and engagement have been incorporated into employer benefits packages. The benefits to employers are direct (i.e., expenses related to interventions such as medical treatment, medications, and hospitalizations) and indirect (i.e., manifested as increased employee productivity by decreasing presenteeism and absenteeism) cost savings.³⁸

SCREENING

Screening is the "presumptive identification of unrecognized disease or health risks by the application of tests or other procedures that can be applied rapidly."⁴⁰ The efficacy of

screening is based on two measures of validity: sensitivity and specificity. The four potential outcomes associated with screening are true positive (a positive test result in the presence of actual disease), true negative (a negative test result in the absence of disease), false positive (test is positive in the absence of disease), and false negative (negative test result in the presence of disease).⁴⁰ 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.⁴⁰

The benefits of screening include early detection of disease, with potential opportunities to institute preemptive treatment that results in better health outcomes and lower morbidity, mortality, and costs.⁴⁰ Screenings such as HRAs and measures of blood pressure, 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.⁴⁰

Certain limitations and potential harms associated with screening (e.g., costs of unnecessary tests and unneeded care, risks linked to false-positive test results) warrant evidence-based assessment of the appropriateness of screening for individual patients.⁴⁰ 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.⁴⁰

Under the ACA, insurance policies, both inside and outside of the Health Insurance Marketplace, must offer essential health benefits, including preventive health screenings for services that meet one of the following criteria:

1. Evidence-based items or services with an A or B rating in the current recommendations of the U.S. Preventive Services Task Force (USPSTF)
2. Immunizations recommended by the CDC's Advisory Committee on Immunization Practices with respect to the individual involved
3. Evidence-informed preventive care and screenings for infants, children, and adolescents as provided for in the comprehensive guidelines supported by the U.S. government's Health Resources and Services Administration (HRSA)
4. Additional preventive care and screenings for women not provided for in comprehensive guidelines supported by the HRSA⁴⁵

States that opt to expand Medicaid must offer essential benefits to newly enrolled beneficiaries,⁴² and the ACA provides Medicare coverage for annual wellness visits, including a personalized prevention plan.⁴⁶

BEHAVIOR CHANGE (HEALTH MANAGEMENT)

An estimated 30% to 60% of patients are not compliant with their physician-directed treatment or medication regimens.⁴⁷ Because of the serious clinical and cost concerns this

raises, behavior modification has become recognized as an integral part of the population health paradigm.⁴⁷ Behavior change encompasses a broad range of physical, emotional, habitual, and cultural factors that influence health status.

Population-based care is an interdisciplinary approach in which primary care providers collaborate with allied health staff to educate, engage, and support patients in behavior change through a process of shared decision making. A key strategy for accomplishing this is the assessment of *willingness to change*. A process of *motivational interviewing* leads to a better understanding of readiness, barriers, and effective strategies that lead to engagement.⁴⁸ When paired with usual clinical care, such participatory behavior change interventions have yielded positive patient outcomes in prevention and treatment of diabetes, hypertension, and lipid disorders; stress management; and tobacco cessation.⁴⁹

PATIENT SELF-CARE

Population-based care acknowledges that consumers are essential partners in achieving good outcomes. Unlike traditional care models that view patients as passive recipients of treatment, a growing body of research has repeatedly demonstrated that health status is improved by means of behavior change and patient self-care. Through culturally and linguistically appropriate education, skills 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.⁴⁷ Once patients engage with their providers to set goals of self-care, health service utilization is lowered as a result of improved compliance with health-promoting behaviors. Actively engaged patients also have an enhanced ability to identify potential health risks early, thereby enabling them to address the risks independently or via timely communication with their primary providers.⁴⁷

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 as a means to manage chronic illness, improve patient outcomes, and lower healthcare costs.⁴⁸ The Patient-Centered Primary Care Collaborative (PCPCC) defines the medical home as a team-based approach to care that is *patient centered* (involving a provider and patient and family partnership that respects patient preferences), *comprehensive* (maintaining a team that is accountable for the patient's care needs), *accessible* (offering ready in-person and remote communication access), *committed to quality and safety* (achieving continuous improvement), and *coordinated* (providing links across other elements of the broader care system, including community services).⁴⁹ The attribute of comprehensiveness has been expanded, with the growing recognition of the medical neighborhood concept (i.e., the constellation of supporting clinicians as well as community, social service organizations, and health agencies that serve the patients within a PCMH).⁵⁰ The PCMH model has

been broadly implemented by government and private providers and is being adopted increasingly by health systems in response to healthcare reform.^{36,51–53} A growing body of evidence indicates that the PCMH is associated with a reduction of medical errors, improved quality of care, and increased consumer satisfaction.^{52,53}

The PCMH is rapidly emerging as a key component of the population health management model. As the consumer's primary point of contact, the primary care physician bears responsibility for team-based health coordination and disease management while ensuring that integrated clinical and community medical and psychosocial care are provided.⁴⁸ Services are based on evidence-based guidelines and enhanced through decision support, with an emphasis on patient self-care and behavior change.⁴⁸ Interoperable IT systems are necessary to integrate care across practices, sites, and the medical neighborhood, enabling appropriate access to medical records, e-prescribing capabilities, and disease registries.⁴⁸ IT systems make it possible to monitor, evaluate, report, and track improvement in the quality of care and patient outcomes, which is the basis for a majority of economic incentive programs (e.g., pay-for-performance).^{54,55}

CHRONIC CARE MANAGEMENT AND DISEASE MANAGEMENT

Traditionally, disease management has been defined as a “system of targeted coordinated population-based healthcare interventions and communications for specific conditions in which patient self-care efforts are significant.”^{48,56} As population health has continued to evolve, healthcare delivery systems are placing greater emphasis on *chronic care management* (CCM) (i.e., the set of activities designed to assist patients and their support systems in managing medical conditions and related psychosocial problems more effectively, with the aims of improving patients' functional health status, enhancing the coordination of care, eliminating the duplication of services, and reducing the need for expensive medical services.⁵⁷ CCM builds on the integrated primary care health paradigm, which focuses 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.”^{58,59} Both CCM and disease management seek to reverse the skyrocketing incidence and prevalence of serious, costly, chronic illness through improving patient outcomes with high-quality, cost-effective care that is optimally delivered by a PCMH.^{48,60,61}

In response to the escalating prevalence of chronic illness and its associated economic burdens, many independent companies, self-insured employers, and health plans have implemented care management programs, often in partnership with vendors that provide these programs for a fee. Such programs utilize evidence-based, patient-focused strategies across populations to change patient behavior through collaborative healthcare, education, coaching, and financial incentives and to increase self-care and compliance.^{25,48,62} Moreover, improvement initiatives must be accompanied by clearly defined outcome measures and evaluation processes to enable program modification.^{25,48} Implementation of

user-friendly, interoperable IT is integral to this health paradigm^{25,48} Employers and health plans have demonstrated that these strategies increase productivity and decrease direct and indirect costs associated with chronic illness.⁵² Many CCM strategies have been developed to combat obesity, coronary heart disease and heart failure, diabetes, chronic obstructive pulmonary disease, asthma, and cancer.^{8,56,60}

Evaluation of care management programs yields mixed results. Some studies report improvements in congestive and coronary heart disease, diabetes, and depression.⁵⁶ Such programs are reported to increase productivity while decreasing absenteeism, presenteeism, and hospitalizations.⁵⁵ However, in many instances, the costs associated with implementing these programs are considerable and may not be offset by reductions in healthcare costs. As a result, the cost effectiveness of CCM programs remains an open question.^{56,60,61} Proponents of CCM programs posit that increasing participation and measuring outcomes will improve cost effectiveness. To address the need for demonstrating and validating the cost effectiveness of CCM programs, public and private health and quality organizations (e.g., Agency for Healthcare Research and Quality, National Committee for Quality Assurance, The Joint Commission, the Population Health Alliance) are promoting clinical and financial outcome measurements to determine whether there is a financial return on investment.³⁹ Suggested outcome measures include healthcare utilization, clinical outcomes, and health care, including new comorbidity and pharmaceutical costs and productivity measures.⁶³

CASE MANAGEMENT

Some individuals face unique or multiple care needs that cannot be adequately addressed through any single care management program. For this reason, *case management* is often used in population health. Case management is the collaborative process of assessment, planning, facilitation, and advocacy for options and services to meet an individual's health needs through communication and available resources to promote quality, cost-effective outcomes.⁶⁴

Because case management focuses on the *individual*, it can provide high-intensity and personalized care planning. It is typically led by specially trained nurses and social workers. Once the individual's care needs are met, the corresponding reduction in risk can lead to a hand-off to a CCM program, ongoing physician follow-up, or a community-based resource.

HEALTH INFORMATION TECHNOLOGY

As described previously, health IT is a critical resource to support population health. In addition to data warehouse registries, risk stratification, and ongoing assessment of outcomes, health IT has important implications for the EHR and commercial and

government insurance functions. Making risk assessments, program enrollment data, or case management care planning available electronically at the clinical point of care can greatly enhance care coordination. Theoretically, health insurers could use the same information that is available at the clinical point of care for actuarial modeling and traditional utilization management, and to advance the quality of care in their provider networks.

ELIMINATING HEALTH DISPARITIES

Health disparities can be 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.^{65,66} These subpopulations experience disproportionate burdens of illness as a result of the barriers imposed by discrimination, as well as those from differences in culture, language, beliefs, and values, which lead to considerable social and economic burdens associated with poor quality of care and lack of access to affordable, quality primary care.⁶⁶⁻⁶⁸

Particularly for minority populations, disparities in health care are manifested in access to quality care, burdens of illness reflected in morbidity and mortality rates, life expectancy, and quality of life.⁶⁶⁻⁶⁸ Racial and ethnic populations in the United States and 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 being uninsured.⁶⁶⁻⁶⁸ These populations have less access to preventive and diagnostic care and treatment, resulting in higher rates of morbidities, emergency department utilization, hospitalizations, and mortalities.⁶⁷⁻⁶⁹ 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.^{67,68}

Since the mid 1990s, many strategies, initiatives, and programs have been implemented to reduce healthcare disparities at the federal, state, and local levels with public and private funding.⁷⁰ However, according to the CDC “Health Disparities and Inequalities Report—United States, 2013,” disparities persist in the prevalence and outcomes of chronic disease, suicide, and infant mortality among racial and ethnic populations.⁷¹ African American adults have the highest prevalence of hypertension and obesity and are at least 50% more likely to die prematurely from stroke or heart disease than Caucasians.⁷¹

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, lack of health literacy, and inadequate access to and coordination of care.⁷² In practical terms, health disparities include a spectrum of factors that affect access, diagnostics, treatment, follow-up, and continuity of care. These barriers result in the day-to-day inability to obtain prescription medications, prevent illness, and avoid hospitalizations or ED use, all of which lead to poorer clinical outcomes and higher costs.⁷²

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 healthcare delivery systems; and implementing interventions to assure quality care to diverse patient populations.”⁷³ This requires the assessment of cross-cultural relations and barriers, expansion of cultural knowledge, and awareness of integration of health beliefs and behaviors.⁷² Organizational, structural, and clinical barriers include the following:⁷²

- Inadequate diversity in institutional leadership, healthcare providers, and workforce; limited clinic hours; and extended waiting for appointments and care.⁸¹ Studies have demonstrated correlations between consumer satisfaction and racial concordance with providers.⁷²
- Healthcare providers’ lack of knowledge of and/or sensitivity to differences in ethnic, religious, or health beliefs; values; and culturally endorsed treatments.⁷²
- Language differences without availability of interpreters (i.e., monolingual or unilingual education and patient information resources that are available only in English) create important structural barriers that significantly impede provider and consumer understanding of assessments, diagnosis, and care recommendations; the necessity of specialty referrals; and mutually agreed-upon compliance with treatments.⁷²

Access to and the provision of culturally and linguistically appropriate/competent care are necessary to reduce disparities in healthcare access, delivery, costs, and outcomes. Recognition of the need for and value of culturally and linguistically appropriate services across the healthcare continuum is reflected in governmental, quasi-regulatory, professional, and educational policies. Although the federal mandate to make accommodations for individuals with low English proficiency has been codified since the Civil Rights Act of 1964,⁷⁴ more recent legislation, regulations, and guidelines^{75–78} reinforce the imperative of effective provider–patient communications. Additionally, organizations such as The

Joint Commission,⁷⁹ the National Committee for Quality Assurance,⁸⁰ and the National Quality Forum (NQF)⁸¹ have developed and implemented cultural and linguistic competency accreditation standards and quality measures, guidelines, and tools. At the state level, six states have required or are in the process of requiring cultural competency training for physician state licensure. Thirty-five states have enacted legislation requiring provisions for language access.⁷³

In 2001, the U.S. Department of Health and Human Services Office of Minority Health published *National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care*⁸² (the National CLAS Standards) 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.^{58,61}

In recognition of current and projected demographic changes; persistent racial, ethnic, and cultural health disparities; the expansion of knowledge about cultural and linguistic competency; and national initiatives to improve access, quality, and costs of care, the Office of Minority Health issued revised standards following a 2-year comprehensive, multifaceted stakeholder assessment and consultation initiative.⁸² The enhanced National CLAS Standards, published in September 2013, broaden the definition of culture to “include religion and spirituality; lesbian, gay, bisexual, and transgender community individuals; deaf and hearing impaired individuals; and blind and vision impaired individuals; include health literacy issues, patient safety and satisfaction principles; establish congruency with other standards in the field and reflect concurrent changes in the healthcare environment and continuum of delivery of care and services.”⁸² Because each of the now 15 standards are considered to have equal importance, healthcare organizations are pursuing adoption of all of the provisions to more effectively achieve improved health outcomes.⁸²

CHALLENGES AND OPPORTUNITIES IN IMPLEMENTING A POPULATION HEALTH APPROACH

Population health is no longer a theoretical construct; it is the new healthcare paradigm that must be implemented to improve the health and health outcomes of our population; to reduce risk, harm, waste, and costs; to eliminate health disparities; and to sustain future generations. The challenges and opportunities of implementing a population health approach amidst the restructuring of our national healthcare delivery and payment system are tremendous. The scope, volume, and complexity of the ACA affect our entire healthcare structure and infrastructure, workforce, financing, delivery, and accountability. A number of the challenges and opportunities have been identified in this chapter, but many more exist and are yet to be defined.

Many of the most pressing challenges related to implementing a population health paradigm fall into three broad areas: clinical, business, and policy.

CLINICAL: CAPACITY CHALLENGES

One key determinant of the success of healthcare reform is the capacity of the healthcare workforce to provide care to the increased number of consumers. The Congressional Budget Office estimates that by 2023, tens of millions of additional individuals will be seeking health care.⁸³ Capacity encompasses the volume, competencies, distribution, and composition of health care disciplines. But increasing capacity alone is not enough; realignment of the healthcare workforce is essential. Our traditional system of health workforce education and training is siloed and uncoordinated. Disparate state licensing and practice acts, insurance coverage, and institutional policies have contributed to discordant, fragmented, and perilous delivery of care.⁸⁴ Transitioning to new models and venues of care in which systems and providers are held accountable for the quality, costs, and patient experience of care necessitates the restructuring and realigning of the healthcare workforce. The roles and responsibilities of healthcare professionals must be reassessed and redefined to accommodate transitions of care across a person's lifespan. An interdisciplinary population health model of care must be integrated into the education, training, and development of healthcare professionals.⁸⁴ There are many untapped opportunities to eliminate professional silos to address the need for competent, quality, evidence-based, patient-centered care; to promote health and wellness; to manage and reduce chronic illness; to engage patients, families, and communities; and to collaboratively address complex health issues and treatment.

In 2013, the Institute of Medicine's Global Forum on Innovation in Health Professional Education convened a workshop to create a transdisciplinary code of ethics for health professionals—a social contract that would reflect an integrated approach among diverse disciplines working with shared values and purpose to address the populations' health needs, standards, and expectations.⁸⁵

BUSINESS: NAVIGATING THE QUALITY MEASUREMENT LABYRINTH

Since the release of the Institute of Medicine's seminal report, *Crossing the Quality Chasm*, in 2001, the scope and imperative of identifying, measuring, and reporting quality metrics have expanded and become a prominent component of our health delivery and reimbursement system.⁸⁶

The NQF, the Centers for Medicare & Medicaid Services, and other federal and state authorities as well as professional, business, and consumer groups have implemented diverse mandatory and voluntary measurements at the health system, provider, and insurer-provider levels.⁸⁷ Recently, the ACA codified the importance of quality measurement through the mandate for the creation and implementation of a National Quality Strategy.⁸⁸ The ensuing plethora of measures has caused confusion, redundancies, inconsistencies, and logistical challenges.⁸⁷ Panzer and colleagues recommend the following changes to improve the structure and value of quality measurement:

- Setting higher quality standards and measurement
- Harmonizing measures and reporting

- Continuing support and reliance on NQF endorsements
- Replacing claims-based measures with measures reflecting true clinical relevance
- Developing and expanding data-rich registries in key domains
- Paying less attention to proprietary report cards
- Transiting carefully to “eMeasures”
- Allocating adequate resources to support data capture and reporting⁸⁷

CONCLUSION

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 of complications, and rely on efficient and effective healthcare options.

The ACA advances population health by increasing access to healthcare services through expanded insurance coverage and by establishing national strategies (e.g., prevention, health promotion, public health, quality) to guide improved healthcare quality and delivery, thereby reducing disparities and improving consumer outcomes through government-funded initiatives and new reimbursement models. The opportunity exists to implement a health promotion and prevention infrastructure that incorporates increased consumer engagement, use of interoperable health IT (e.g., EHRs), interdisciplinary healthcare teamwork, coordinated transitions of care across the life spectrum, and primary care reform with the patient-centered medical home and innovative payment reform models (e.g., accountable care organizations).

While other health reform efforts are underway, population health promises to be a key component of the United States’—and possibly the rest of the world’s—efforts to reduce chronic illness. Given the twin challenges of increasing quality and reducing cost, population health remains the best strategy for 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 that address population health needs?

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Healthy People 2020: <http://www.healthypeople.gov/>
 Kaiser Family Foundation: <http://www.kff.org/>
 National Business Coalition on Health: <http://www.nbch.org/>
 National Coalition on Health Care: <http://nchc.org/>
 National Prevention Strategy: <http://www.surgeongeneral.gov/initiatives/prevention/strategy/>
 National Priorities Partnership: http://www.qualityforum.org/Setting_Priorities/NPP/National_Priorities_Partnership.aspx
 National Quality Forum: <http://www.qualityforum.org/>
 Patient-Centered Primary Care Collaborative: <http://www.pcpcc.net>
 Population Health Alliance (formerly DMAA: The Care Continuum Alliance): <http://www.populationhealthalliance.org>
 U.S. Preventive Services Task Force: <http://www.uspreventiveservicestaskforce.org/>
 World Health Organization: <http://www.who.int/en/>

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