



9

Quality Care Improvement

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Introduction

The building blocks of sustainable community health include eliminating health disparities, improving health equity, and achieving social justice. While there are many factors that influence sustainable community health, it cannot be achieved without improvements in the *quality of care* at the individual treatment level and at the community- or population-health levels. Hospital systems are required to report on several key quality measures, including preventable readmissions, patient satisfaction, and the number of heart attack patients who receive aspirin upon arrival in an emergency department (Glance, Osler, Mukamel, & Dick, 2008). In recent years, payment reforms that emphasize value of care over volume of care have created new incentives for health care providers to control costs and improve quality. These changes have also broadened the concept of QCI to include, not only improvements in the treatment of

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individual patients, but also improvements in the overall population health in the community.

Learning Objectives

After reading this chapter, the reader should be able to:

1. Define quality care improvement (QCI) applied to community health settings.
2. Describe the past and current perspectives of QCI and its role in advancing the sustainable community health model.
3. Discuss the current and emerging QCI metrics for promoting the sustainable community health.
4. Evaluate cultural, professional, and legal policies that affect QCI processes and practices in community health systems, including identifying relevant stakeholders and their prospective roles.
5. Identify research opportunities to further explore the importance of QCI for sustainable community health.

QCI encourages the medical community to develop closer working relationships and alliances with public health agencies, other agencies in non-health sectors such as transportation and housing support, and local community-based organizations to reduce health disparities, increase health equity, and improve care coordination. Greater care coordination has created new types of health workers, data sharing agreements, and flexible funding strategies. Although achieving the broader version of QCI is more challenging, it is a critical dimension of the sustainable community health model at the population level.

The definition of **population health** varies widely across the health care spectrum. For example, health care leaders in accountable care organizations (ACOs) tend to use “population health” to narrowly describe efforts to improve care for their patient populations (Noble, Greenhalgh, & Casalino, 2014). Meanwhile, public health leaders often think of “population health” in terms of all people living within a geographic area. For our purposes, we use the definition proposed by Kindig and Stoddart: population health is “the health outcomes of a group of individuals, including the distribution of such outcomes within the group” (2003, p. 3). This definition encourages thinking of population health not only

in terms of geographic regions (e.g., nations, states, and communities), but also in terms of the distribution of health outcomes across different population groups within those geographic regions (e.g., immigrant groups, LGBTQ groups, and justice-involved groups). As Kindig and Stoddart note, this definition forces us to consider the multiple determinants of health, including “medical care, public health interventions, aspects of the social environment (income, education, employment, social support, culture) and the physical environment (urban design, clean air and water), genetics, and individual behavior,...as well as the resource allocation issues involved in linking determinants to [health] outcomes.” To that end, we think of the social determinants for health as “the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power, and resources at global, national and local levels” (Kindig & Stoddart, 2003, p. 4). The social determinants of health as depicted in Fig. 9.1 are mostly responsible for *health inequities*—“the unfair and avoidable differences in health status seen within and between countries” (WHO, 2008). We cannot hope to improve population health or reduce health disparities across population groups without addressing the social determinants of health (see also Chap. 2, this volume).

Many states are experimenting with new health care delivery models and payment models that incorporate QCI as a key driver in reducing health disparities and promoting health equity. Most of these models focus on improving nonmedical factors that influence health and promote sustainable community health. While these models use different approaches to address these challenges, they share several underlying principles, including: (1) coordinating care around the needs of patients across the continuum of care (e.g., primary care, hospital, and the community); (2) broadening the scope of services (i.e., moving from a narrow focus on individual patient’s conditions to a broad focus on the health of populations, including the social determinants of health); (3) using data and information systems to screen and track high-risk patients and direct them to the most appropriate care setting to avoid unnecessary hospitalizations and emergency department visits; (4) creating an effective referral system and data sharing arrangements between health care providers and community-based organizations; (5) forming multi-sector

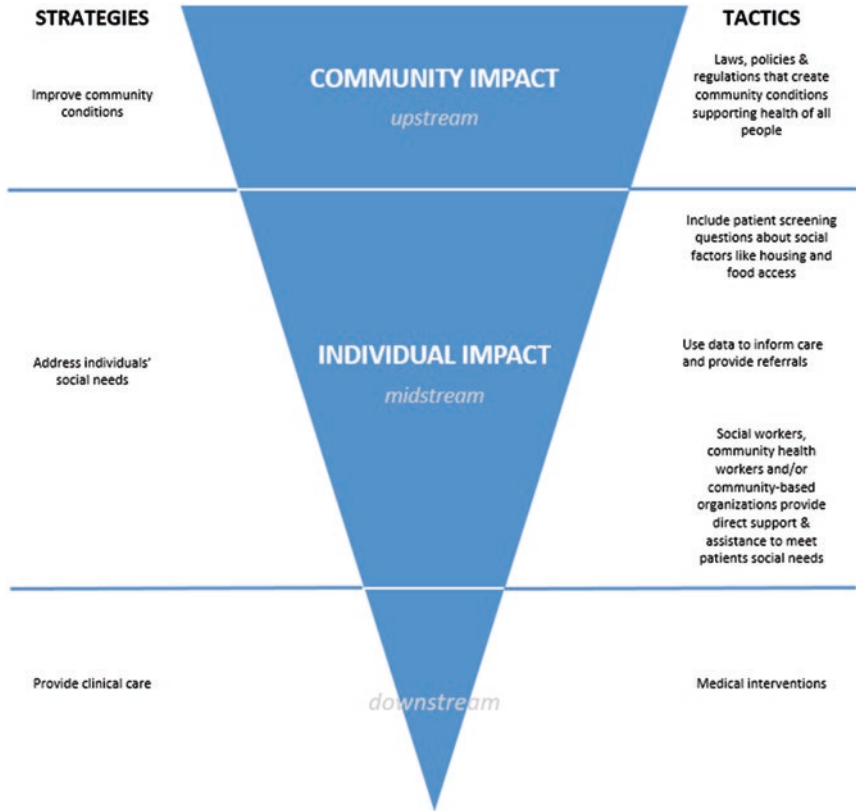


Fig. 9.1 Social determinants of health. (Source: Adapted from Kaiser Family Foundation, 2019)

partnerships that include public and private stakeholders to address medical and nonmedical patient needs; and (6) developing appropriate measures to track the progress of patients and populations, and to ensure that all major risk factors are addressed with evidence-based or best-practice interventions. Although states and jurisdictions have used these approaches to enhance sustainable community health, the models described in the following sections are successful when they embrace the broader concept of QCI by promoting health equity and by addressing health disparities.

Professional and Legal Definitions of QCI

Before we dive into examples, developing a common nomenclature is helpful. We propose terms and meanings related to QCI, such as quality improvement, continuous care improvement, and change management.

Quality improvement (QI) describes a systematic, formal, and iterative process of collecting and using data to test, change, and improve the performance of a system. Data are gathered to identify gaps between current quality and expected quality, changes are introduced to a system to narrow those gaps, and the effect of those changes on outcomes and performance is routinely measured. QI relies on a robust performance management strategy, iterative tests of change, and coordinated access to valid data. *Quality care improvement* (QCI) brings principles of QI to health care organizations and systems, and QCI projects assess whether care is safe, timely, effective, efficient, and equitable. Not to be confused with QCI, *continuous quality improvement* (CQI) is a component of QCI that embeds the improvement process in the delivery of services at the site level. CQI engages frontline staff in an ongoing process of addressing what and how care is delivered. While there are subtle distinctions between these definitions, QI, QCI, and CQI are used interchangeably throughout this chapter.

In recent years, the concept of QCI has moved from a relatively narrow focus to a broader emphasis (see Fig. 9.2). QCI initially focused downstream on individual treatment through clinical interventions. While this is an important aspect of QCI, its focus has shifted to move midstream to address the social needs of individuals (i.e., screening for the social needs of individuals and providing services to meet these needs). However, QCI efforts must also continue to move upstream to change community conditions and improve the health of communities and populations. These improvements require changes in laws, policies, and regulations to create more favorable health conditions (Castrucci & Auerbach, 2019). By habitually refocusing our attention upstream, there is a greater possibility of eliminating health disparities, improving health equity, and achieving social justice.

From an organizational perspective, the crux of QCI is the willingness and ability to encourage and manage both anticipated and unanticipated

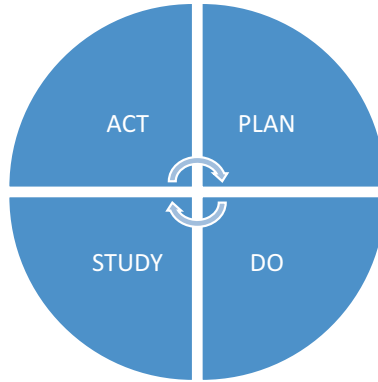


Fig. 9.2 Social determinants and social needs: moving beyond midstream. (Source: Adapted from Castrucci & Auerbach, 2019)

change, which is the key to a successful quality improvement effort. *Change management* is a systematic approach to preparing and supporting internal and external stakeholders to adapt to and sustain a lasting change within an organization. According to the National Association of County and City Health Officials (NACCHO), QI involves “designing system and process changes that lead to operational improvements, and an organizational culture where quality is ingrained in organizational values, goals, practices, and processes” (2017). For example, an operational change could be something as discrete as revising the approval process for contracts, or it could be as transformational as a complete shift in organizational strategy and culture that embraces quality. In both cases, structural and process changes are introduced, and change management is key to obtain buy-in from employees during and after the transition phase.

Historical Evolution of Practice Related to QCI

QCI is a relatively new concept in the delivery of health care services. In a 2001 report, the Institute of Medicine (IOM) first defined its vision for how to narrow the gap—which it astutely described as a chasm—between what care is provided and what care should be received. The IOM

attributed these adverse quality issues to outmoded systems of work and recommended that all health care organizations pursue the delivery of health care according to the following six aims: safe, effective, patient-centered, timely, efficient, and equitable (IOM, 2001). This vision was later operationalized to include fostering rapid advances in health care, redesigning care delivery, furthering measurement and informed purchasing, and preventing iatrogenic injuries (foremost among them medication errors, hospital-acquired infections, and other preventable events). In response to the mandates contained in the Medicare Prescription Drug, Improvement, and Modernization Improvement Act of 2003, this novel vision of QI moved health systems forward incrementally, but it did not incentivize them to transition to sustainable community health. However, when the Affordable Care Act (ACA) was passed in 2010, it paved the way for the federal government, particularly through the Centers for Medicare and Medicaid Services (CMS), to become an incubator of innovation by funding new health care delivery such as accountable care organizations (ACOs) and payment models that reward robust QCI and proactively improve the health of populations.

Over the last decade, CMS has prioritized value (specifically, improving individual care, improving population health, and lowering costs) in many of their programs by paying providers higher rates for improving the quality of care. Until recently, these value-based payments were largely focused on clinical care but stopped short of addressing nonmedical determinants of health or amplifying truly sustainable community health. For example, CMS's Hospital Value-Based Purchasing Program pays acute care hospitals based on metrics such as rates of readmissions, rates of adverse events, adoption of evidence-based care standards, patient engagement, care transparency for consumers, and population health. CMS's Hospital-Acquired Condition Reduction Program and Hospital Readmissions Reduction Program also reward providers for improving their quality of clinical care. Unfortunately, CMS saw only modest improvements in readmission rates and 30-day mortality rates from 2013 to 2017 (Hinton, Musumeci, Rudowitz, Antonisse, & Hall, 2019). Further, these improvements were largely the result of improved clinical care and were not related to any successes in addressing the social determinants of health.

Approaches to QCI for Sustainable Community Health

In the United States, new innovative reimbursement and health care delivery models have provided the foundation for innovation at the state and community levels. These models make it easier for providers and community partners to link clinical and community approaches to health because they are based on the concept of value. Value is based on improvements in individual and population health outcomes, as well as the cost of delivering those outcomes. Value-based payment systems reimburse hospitals and providers based on patient health outcomes and shift the incentive from quantity of care to quality of care. This is a striking departure from fee-for-service or capitated approaches that have dominated health care systems until the last decade. With the passage of the Patient Protection and Affordable Care Act (ACA), a larger number of providers are adopting fee-for-value approaches that reward them when they collaborate with patients to improve individual and population health metrics (Abrams et al., 2015).

Two new health care delivery models have emerged that focus on value-based care, including ACOs and patient-centered medical homes (PCMHs). ACOs are value-based *payment* mechanisms made up of voluntary groups of providers that are contractually responsible for the total cost and quality of care for a defined patient population. Many argue that the ACO model gives providers the flexibility to address patients' non-medical needs, as well as the incentives and funding to do so. PCMHs are value-based care *delivery* mechanisms that tend to be practice-specific. Historically, they integrate primary, specialty, and acute care, but some PCMH models are pushing beyond medical care services to embrace a model of whole-person care. In this approach, a physician does not merely treat a patient, but uses a coordinated care team to collaborate with the person, screens for nonmedical needs and social determinants of health, refers people to key resources in the community, and embraces a model of health and wellness.

Current system-level QCI approaches that are implemented at the state and community levels utilize various value-based models: Section

1115 Medicaid Waivers, New MCO Requirements, and Accountable Care Organizations. Alternative, non-value-based approaches such as accountable health communities identify and address the nonmedical determinants of health and innovations developed by the Federally Qualified Health Centers. Emerging or promising approaches to quality improvement at the organizational level include the Plan-Do-Study-Act (PDSA) cycle, clinical pathways, and changes in the patient safety culture. These approaches are considered next.

Value-Based Medicaid Programs Using the Section 1115 Waivers

Several states have used Section 1115 waivers to develop an array of value-based payment models aimed at reducing costs and improving the quality of care. Most of these models encourage multi-sector partnerships and include performance measures that link financial incentives to improvements in quality. As of June 2019, 47 waivers from 39 states have been approved by CMS, and 20 waivers from 18 states are still pending (Hinton et al., 2019). A recent report identified some common themes related to these demonstrations, which include: (1) enhancing care coordination and community partnerships to address the social determinants of health (e.g., screening for social needs, linkages to community resources, and partnerships with social service agencies and community-based organizations) and (2) using payment incentives to address the social determinants of health. Evidence suggests that investing in social services results in better community health outcomes (Bradley et al., 2016; McCullough & Leider, 2016). Early QI efforts indicate improved quality, controlled costs, and reduced disparities (McConnell et al., 2017; Muoto, Luck, Yoon, Bernell, & Snowden, 2016).

The states of Oregon, California, and North Carolina have received Section 1115 waivers to address patients' nonmedical needs by funding social interventions, including case management and care coordination services, and connecting patients with basic social supports to address transportation, housing, food, and legal needs. In 2012, Oregon received a Section 1115 waiver to create coordinated care organizations (CCOs)

and fund social supports and interventions (e.g., transportation to medical services and referrals to social services) not usually covered by Medicaid. Specifically, a portion of the CCO global budget, referred to as the “quality pool,” is tied to performance and quality. To receive these funds, CCOs must meet performance targets on 17 quality measures (e.g., depression screening and follow-up, childhood immunization status, developmental screening at well-child visits, dental sealants for children, effective contraception use, and satisfaction with care). The quality pool is designed to offer CCOs the flexibility to invest in social interventions. For example, some centers added community health workers (CHWs) to screen, support, and collaborate with patients with nonmedical needs. While the infrastructure to support such flexible investments exists, one study found that Oregon’s CCOs spent less than 0.1% of their budgets on social interventions (Kushner & McConnell, 2018). Still, Oregon’s Medicaid expenditures have grown more slowly than the projected rate, resulting in \$2.2 billion cost savings from 2013 to 2017 (see Research Box 9.1).

Research Box 9.1: Oregon’s Coordinated Care Organizations Show Promising Results (Kushner et al., 2017)

Background

In 2012, the Oregon Medicaid program received a Section 1115 waiver to control costs and improve access to and the quality of health care services. It also provided an opportunity to increase investment in social interventions such as housing services and food insecurity programs and improve the coordination of care between physical and behavioral health. To achieve the goals of lower costs, improved access, and higher quality, Oregon established regional coordinated care organizations (CCOs) so that Medicaid patients would have a single point of accountability for health care services. The CCOs were locally governed and included Medicaid members, health care providers, and other stakeholders. They received a global budget to pay for physical, behavioral, and oral health care services and coordinate other services to better meet their social needs (e.g., housing and economic assistance). One of the CCO directives was to provide less expensive health-related services that would replace or reduce the need for medical services. They could also receive bonus payments if they met specific quality and outcome measures.

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Method

The evaluation of the program was conducted by the Center for Health Systems Effectiveness in the Oregon Health and Science University. The evaluation team used a variety of measures to examine the changes in health care spending, quality, and access between 2011 (the year before the project began) and 2015. For most measures, they compared the changes among CCO members to a control group, which was the Medicaid program in Washington state. The Washington Medicaid program was selected because it did not make any major changes during this period.

Results

Between 2012 and 2017, considerable progress was made in achieving the goals of the project. First, the evaluators found that total health care spending per member per month decreased among CCO members relative to the control group (Medicaid members in the State of Washington). The most significant declines were for inpatient facility spending. The changes in quality measures were mixed. On the positive side, there was a decrease in the avoidable emergency department visit rate and an increase in the percentage of adolescents with at least one well-care visit among CCO members relative to Washington Medicaid members. However, glucose testing for people with diabetes fell in comparison with Washington members. Finally, most access measures for CCO members decreased slightly relative to the Medicaid members in Washington. Although CCOs experimented with spending on social interventions, overall spending was low relative to medical services. Strong efforts were made to integrate physical and behavioral health services, but these efforts mostly failed because of regulatory and contracting issues.

Conclusions and Implications

The redesign of the Oregon Medicaid program led to decreases in spending and improvements in important health care quality measures. In addition, it appears that bonus payments for health care providers are strongly associated with improvements in quality measures.

What Do You Think?

1. How was the Oregon Medicaid program redesigned and how were the payment incentives changed to control cost and improve quality?
2. What were the goals of the Oregon Medicaid program and how successful were they in meeting these goals?
3. How are the Oregon Medicaid program initiatives for sustainable community health?

Similarly, California created Whole Person Care (WPC) Pilots in 2016 to coordinate social interventions across partnerships of local health departments, managed care plans, hospitals, and social service organizations. Incentive payments funded care coordination for successful transitions for people who were formerly incarcerated into the community (Bandara et al., 2015). Bundled payments funded intensive case management for homeless patients, as well as investments in data sharing systems (Alderwick, Hood-Ronick, & Gottlieb, 2019). The savings from these programs created a flexible housing pool, which is used to cover rental subsidies and supportive housing development (Alderwick et al., 2019; see also Research Box 9.2).

Research Box 9.2: Interim Evaluation of California’s Whole Person Care (WPC) Program (Pourat et al., 2019)

Background

In 2016, the California Department of Health Care Services began implementing the Whole Person Care (WPC) Program for high-risk, high-utilizing Medicaid enrollees. Most of the California counties that participated in the program focused on improving the health and wellbeing of enrollees by coordinating care across spheres of care delivery, including physical health, behavioral health, and social services. The pilot projects had the option of targeting one or more of the target populations, including individuals experiencing homelessness and individuals at risk of homelessness. The pilots were required to provide a comprehensive assessment of the patient’s needs and define individual or bundles of services. Many types of services have directly addressed the social determinants of health. For example, care coordination services included benefit support such as transportation to appointments. Almost half of the enrollees received employment assistance (e.g., support in developing skills and connections that would improve their chances of obtaining employment). In addition, almost 70% of the pilots offered housing support services because nearly half of the WPC enrollees were homeless.

Method

This project was evaluated by the UCLA Center for Health Policy Research using a mixed-methods approach. The Center analyzed the data based on reportable measures, including monthly enrollment and utilization reports, bi-annual narrative reports, and claims. In addition, surveys were conducted of the 27 lead entities and 227 involved partners as well as follow-up interviews with staff from the lead entities.

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Results

Although the project has not been completed, some interesting results have emerged. When the WPC enrollees were compared with a control group of other California Medicaid recipients, the rates of emergency department (ED) visits did not show a significant change for either group. However, there was a significant increase in hospitalizations for the WPC enrollees as compared to the control group. When the ED visit rates were assessed after the first two years, the rates for WPC enrollees declined by 19% as compared to only an 8% drop for the control group. When an assessment was made of the approaches in the delivery of services to the homeless populations after the first two years of the project, there were early successes in the delivery of housing services but also challenges in retaining permanent housing. For example, the number of WPC enrollees who received housing services increased from 58% to 67% from year 2 to year 3. Some of the common housing challenges included coordinating care, linking enrollees to housing services, and lack of affordable housing. One of the solutions to overcome these challenges was to partner with local organizations.

Conclusions and Implications

The California pilot projects were very successful in enrolling high-risk, high-utilizing Medicaid patients who were frequently homeless. Some progress was made in reducing the number of ED visits and the delivery of housing services. However, many challenges remain and reflect the historical gaps in the management of patients with complex conditions and underlying social determinants of health. Overcoming these challenges will require time, resources, and a deliberate effort.

What Do You Think?

1. How did the WPC pilot projects attempt to address the social determinants of health in a sustainable way?
2. What were the successful outcomes of the project for population health sustainability?
3. How could the WPC pilot projects be reconfigured for sustainability?

In 2018, North Carolina began using its Section 1115 waiver to create Healthy Opportunities Pilot Programs that target social needs, including housing, transportation, and food insecurity, as well as interpersonal violence and toxic stress. These pilot projects can use their funds to cover expenses related to carpet replacement to control a child's asthma,

vouchers to travel to and from a food pantry, and safe housing for a pregnant woman victimized by intimate partner violence. A rapid-cycle QCI process will be used to identify which interventions are most and least effective and best practices will be disseminated to the pilots. One of the unique features of this model is that each pilot will be anchored by a community-based health or social service organization, not a health care organization (Hinton et al., 2019).

Several states are addressing child population health needs by leveraging funding through the Children's Health Insurance Program (CHIP). Once a state's CHIP administrative costs are covered, they can apply to use remaining funds for initiatives focused on direct services or public health initiatives, including maternal care, nutrition, behavioral health, school health services, lead abatement efforts, and other prevention and intervention projects (NASHP, 2018).

Value-Based Medicaid Programs with New MCO Requirements

At least 39 states provide services to Medicaid beneficiaries through contracts with risk-based managed care organizations (MCOs). Once contracts satisfy federal rules, states have the flexibility to require or create incentives for MCOs to provide care coordination activities that address the social determinants of health. These requirements or incentives may involve several activities, including screening for nonmedical needs, connecting beneficiaries to appropriate nonmedical services, and authorizing payment for members of the nonclinical workforce involved in addressing the social determinants of health (Matulis & Lloyd, 2018). Some examples of Medicaid MCO activities related to the social determinants of health are illustrated in Table 9.1. This table shows that states have a variety of strategies to address the social determinants of health, including job counseling services, connecting members with housing support services, and health coordination between health care providers and the Women, Infants, and Children's Program (WIC).

Table 9.1 History of quality of care improvement in the United States

History of QCI in the United States	
1953	Joint Commission on Accreditation of Hospitals established to provide voluntary accreditation based on a rubric of quality standards
1966	Avendus Donabedian publishes, <i>Evaluating the Quality of Medical Care</i>
1989	Agency for Health Care Policy and Research (now known as the Agency for Healthcare Research and Quality) was created
1999	Institute of Medicine publishes, <i>To Err is Human</i>
2001	Institute of Medicine publishes, <i>Crossing the Quality Chasm</i>
2003	U.S. Congress passes and President Bush signs the Medicare Prescription Drug, Improvement, and Modernization Improvement Act
2006	Physician quality reporting system (PQRS) established to provide incentive payments for successful reporting on three quality measures
2010	U.S. Congress passes and President Obama signs the Patient Protection and Affordable Care Act (ACA)
2011	CMS releases final rules for the official implementation of accountable care organizations under the ACA
2012	Quality Reporting and Hospital Value-Based Purchasing program begins to be implemented, full implementation by 2016
2014	Medicaid expansion is funded; CMS substantially expands funding for CQI innovation projects
2015	PQRS changes from incentive-based pay-for-reporting; adds penalties for those who fail to report on quality measures
2015	Medicare Access and CHIP Reauthorization Act (MACRA)—the law requires that physician payments will be based on meeting certain quality measures

Value-Based Medicaid Programs Using Accountable Care Organizations

State Medicaid programs are also contracting with accountable care organizations (ACOs) to control costs and improve QCI. Although ACOs face several challenges such as a lack of financial resources, limited staffing capacity, competing clinical priorities, and scalability of programs, several studies have found that as ACOs gain experience and become more mature, their ability to integrate medical and nonmedical services becomes more sophisticated (Fraze, Lewis, Rodriguez, & Fisher, 2016).

The North Carolina Medicaid Program began contracting with Community Care of North Carolina (CCNC), which is a web of community networks across the state composed of practicing physicians

working in partnership with hospitals, health departments, and departments of social services. CCNC networks emphasize population health management, case management and clinical support, and data and feedback. Community Care Physician Network treats one of every three Medicaid patients in North Carolina and saves the state \$160 million annually. It is an effective system of care for patients with chronic illnesses.

Beginning in 1988 as a demonstration project in a small rural county in eastern North Carolina, CCNC has evolved through several iterations over the last 25 years and used CQI to refine its approach. For example, rather than simply targeting high cost/high-risk patients, CCNC used CQI to develop a more refined strategic approach to complex case management from a focus on “high risk” to a focus on “high impact.” Using CCNC’s Complex Care Management Impactability Scores yield twice the savings of targeting emergency department and inpatient super-utilizers and three times the savings of less discriminant case management services.

Several other states, including Colorado, Massachusetts, and Vermont, have also contracted with ACOs. All states have focused on chronic disease management and many of the social determinants of health such as transportation, housing support services, nutrition classes, and exercise equipment. Some states are also required to address food access, family/caregiver support, and social isolation (see Research Box 9.3).

Research Box 9.3: The History, Evolution, and Future of Medicaid Accountable Care Organizations (Matulis & Lloyd, 2018)

Background

Many states have begun to implement Medicaid accountable care organizations (ACOs) to control costs, collect and analyze data, particularly on high-risk patients, and improve quality and patient outcomes. Various cost and quality benchmark metrics are established by the Medicaid programs, and ACOs must report on these metrics (e.g., number of unnecessary emergency department visits, number of patients that have blood pressure rates below 130/80, or Hemoglobin A1c rates below 9%). The benchmarks are usually based on the ACOs prior performance or the performance of other ACOs. To hold providers accountable and meet these cost and quality benchmarks, financial incentives are established and usually involve a shared savings arrangement (SSA). In an SSA, providers in the ACO have an

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opportunity to share in savings if their attributed population uses a less costly set of health care resources than a predetermined baseline. In addition to meeting the cost baseline, ACOs must also meet or exceed their quality benchmarks to share in the savings.

Method

This analysis of Medicaid ACOs was based on in-depth interviews with representatives from seven states that were early adopters of Medicaid ACOs. After the interviews were conducted, common themes and lessons learned from their experiences were identified.

Results

Although not all individual Medicaid ACOs have achieved better health outcomes at a lower cost, most state initiatives have demonstrated promising results. For example, the ACOs in Colorado have saved the Medicaid program \$77 million in the first three years, and they have reduced emergency department visits, high-cost imaging, and hospital readmissions. In Vermont, two ACOs reported \$17 million in savings in the first two years of the program and exceeded their quality benchmarks. The 21 ACOs in the Minnesota program saved more than \$212 million over four years and consistently exceeded their quality benchmarks. While there have been some promising findings, the study also identified some key challenges and lessons learned. One of the lessons learned was that there was not a single model that was used by all states. Most of the ACOs were led by providers but in some states payers or a community organization assumed a lead role. The scope of services and the types and number of quality measures also varied. For example, all programs included physical health, but some states added behavioral health, dental health, and long-term care services. One state had 38 quality measures while another state had only 12. As the programs have evolved, states have reduced the number of quality measures by focusing more on high-impact, population health quality metrics that align with other delivery system and payment reform initiatives.

Conclusions and Implications

Although Medicaid ACOs will continue to evolve in their governance structure, scope of services, and approaches to quality improvement, these early Medicaid ACO efforts demonstrate the value of connecting provider's reimbursement to patient health outcomes. The shift to a smaller number of quality measures that focus more on population health outcomes should lead to improved care coordination and a greater focus on high-risk populations.

What Do You Think?

1. In a Medicaid ACO model, what incentive do providers have to lower costs and improve the quality of care?
2. What are some of the challenges and lessons for sustainability learned from the implementation of Medicaid ACO models?
3. What would be impact on the sustainability of a health system from reducing the number of quality measures?

Value-Based Medicaid Programs Using Accountable Communities for Health

Accountable Communities for Health (ACHs) are organizations that have also expanded the concept of QCI by placing a heavy emphasis on the social determinants of health and other nonmedical factors that play an important role in improving the overall health of the population (see Research Box 9.4). One example of an ACH model is the California Accountable Communities for Health Initiative (CACHI). This Initiative is a multi-sector alliance of major health care systems, providers, and health plans, along with public health, key community and social services organizations, schools, and other partners. CACHI receives funding from CMS and private foundation funds to develop and implement prevention strategies. In July 2016, CACHI announced awards to six communities throughout the state to “advance common health goals and create a vision for a more expansive, connected, prevention-oriented system” (The California Endowment, 2016). While each community determines its governance structure based on community needs, they must engage

Research Box 9.4: Using Data for Quality Improvement: A Case Study from St. Joseph’s Hospital Health System (Centers for Medicare and Medicaid Services, 2019)

Background

In 2016, the Centers for Medicare and Medicaid Services (CMS) began accepting applications to fund an Accountable Health Communities (AHC) model. The purpose of the project was to test whether health-related social needs can be systematically identified and addressed for the Medicare and Medicaid beneficiaries in communities. The foundation of the model is to develop a universal, comprehensive screening protocol to identify social needs, including poor housing quality, difficulty in paying utility bills, food insecurity, and transportation difficulties. For the AHC program to be successful, the first step is to maximize the number of beneficiaries who are screened.

In 2018, the St. Joseph Hospital Health System, a nonprofit health system in Syracuse, New York, began implementing the AHC model. St. Joseph serves as a bridge or hub for 19 clinical delivery sites, including primary care clinics, urgent care centers, and an emergency department. All sites screen for health-related social needs, and St Joseph has developed two types of reports to

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monitor trends. The first report tracks the aggregate number of completed screenings per day for all sites. The second report is a screening dashboard that identifies the number of beneficiaries who were screened at each site and compares these numbers with program-wide benchmarks. In its role as the hub organization, staff from St. Joseph review the underlying performance issues and work with the clinical organizations to improve the screening rates.

Methods

This project was assessed using personal interviews with project staff. The interviews, which were conducted by Mathematica, involved questions about the process for developing data monitoring reports, how the reports are reviewed and how they guide quality improvement screening efforts, and future quality improvement initiatives.

Results

The reports developed by project staff have been very effective in identifying limited screening rates in low-performing clinics. When these clinics are identified, staff review the data with clinic staff and determine possible solutions that will increase screening rates (e.g., resistance by physicians and nurses to additional screening questions and inadequate staffing). Screening processes were also reviewed to identify best practices. For example, at the highest performing sites, screeners used a script to explain to beneficiaries why the screening is offered. High-performing sites also give beneficiaries the screening form on a clipboard so they can complete it in the waiting room, and they ensure that the forms are returned to the registration desk. Increasing the screening rates across all sites is a critical first step that allows this AHC to connect a larger number of high-risk beneficiaries with community-based services. Although no results are available on the impact of these referrals and linkages at this time, the improvement in the screening rates is an important step in meeting the health-related social needs of the beneficiaries.

Conclusions and Implications

The major goal of the AHC model is to screen Medicare and Medicaid beneficiaries for social needs and then refer them to community-based services (e.g., housing authority and food bank) to meet these needs. Without a high-level screening process that is continually monitored for quality and is consistent across the clinical sites, this model will not be successful.

What Do You Think?

1. What is the purpose of the AHC model, and what types of social conditions are addressed in the model that have sustainability implications?
2. What methods does the St. Joseph Hospital Health System use to monitor the screening process across their clinical sites? How sustainable are the procedures and why?
3. What were some of the factors that led to low screening rates at some sites, and what were some of the best practices of high-performing screening sites?

across multiple sectors. Further, ACHs must describe how they will share data in support of their population health improvement activities as well as community health, clinical, and cost data to support the goals of the ACH.

Similar ACH models are being tested and implemented in 11 states, including Minnesota, Vermont, Washington, and Iowa. Minnesota is leveraging \$5.6 million of CMS funds to launch 15 ACHs in the state and requires each ACH to collaborate with an ACO in an innovative coordinated care model. A new Statewide Quality Reporting and Measurement System is being used to coordinate performance management across providers and settings with specific action plans for behavioral health, long-term care, and social services providers (Vickery et al., 2018). Vermont launched ACHs across its 14 health service areas (NASHP, 2018). Healthier Washington includes nine ACHs across the state, and they are focused on behavioral health challenges in school and health care settings to connect with community-based treatment services and interventions (NASHP, 2018; see also Discussion Box 9.1).

Other State Approaches for Addressing the Nonmedical Determinants of Health

Shreya Kangovi and her team at the University of Pennsylvania have created a scalable strategy for implementing patient-centered care for vulnerable populations. The model, Individualized Management for Patient-Centered Targets or IMPaCT, trains and deploys CHWs as front-line health workers. CHWs are trusted community members who share socioeconomic backgrounds with their patients. A randomized controlled trial (RCT) found that IMPaCT improves access to primary care and quality of discharge while controlling recurrent readmissions among a population of low-socioeconomic status (SES) adults with varied conditions (Kangovi, Mitra, & Grande, 2014). Other RCTs have found that CHWs can reduce hospital stays by 65% and double the rate of patient satisfaction with primary care (Kangovi et al., 2018). Where other CHW models have been unsuccessful due to poor standardization and replicability, IMPaCT is an evidence-based, exportable model of care that improves population health outcomes (see Discussion Box 9.2).

Discussion Box 9.1: ACH Models and Other Value-Based Approaches Act in New Ways

ACH models and other value-based approaches have created new ways of thinking about quality and health equity. In the fee-for-service system, the emphasis was on clinical treatment and volume of services, often to the exclusion of the social needs of patients. In contrast, value-based models have expanded the concept of QCI to include not only clinical care but to also address the broader social needs. These new value-based models provide financial incentives and an opportunity to improve the health of individuals and communities. From a health care provider perspective, however, this shift has created a dilemma because there are still many challenges and some unanswered questions. One of the challenges is that the reimbursement levels are often insufficient to cover all expenses (e.g., data collection and analysis, time for screening, and extra staffing). Second, care coordination with behavioral health providers, local health departments, and social service agencies is difficult in many areas because they operate as separate systems with different funding mechanisms. Third, it is challenging to track the outcomes of patients that are referred to community-based services and for some patients, there may not be a workable solution (e.g., permanent housing for those experiencing homelessness). Finally, many health care organizations have been forced to change their culture, and change initiatives that are not executed well often result in resistance among staff. Despite these challenges, many health care organizations are moving forward with a broader vision of QCI because they understand that it will lead to improved patient outcomes.

What Do You Think?

1. How have ACH and other value-based models expanded the concept of QCI?
2. What are some of the sustainability-related challenges of adopting one or more of these models from a provider perspective?
3. Do you think value-based models will ultimately be successful in broadening the concept of QCI in the long-term? Say why and how.

QCI in Federally Qualified Health Centers

Funded by the U.S. Department of Health & Human Services, Federally Qualified Health Centers (FQHCs) provide community-based health care in underserved areas. Many FQHCs have used a variety of QCI projects to improve patient outcomes (see Discussion Box 9.3). For

Discussion Box 9.2: Community Health Workers (CHWs) to Assist Patients in Meeting Their Needs

Many patients with complex clinical and social needs often have a greater proportion of emergency department visits and hospital readmissions. To address these challenges, health organizations are using community health workers (CHWs) to assist patients in meeting their needs. CHWs are trusted laypeople within a community, have durable relationships with other community members, and understand the landscape of community assets, services, and needs. They are trained by clinics, local health departments, universities, and other organizations to serve as a liaison between patients and health and social service organizations to reduce health disparities and improve access to and the quality of health-related services. CHWs provide a range of services, including interpretation and translation, culturally appropriate health education, informal counseling, and motivational interviewing, as well as offer some direct services such as blood pressure screening.

The Individualized Management for Patient-Centered Targets (IMPACT) is a unique model that uses CHWs. This model has been quite successful in reducing readmissions for high-risk populations because a CHW helps patients create individualized health goals for recovery during the hospital admission. After discharge, they work with the patients for a minimum of two weeks to achieve these goals. When the CHW intervention group was compared with a control group, the intervention patients were more likely to receive timely post-hospital primary care, report higher quality discharge communication, and show greater improvements in mental health.

What Do You Think?

1. What are some of the roles and functions of CHWs, and how do they make for sustainability of health services?
2. How did the IMPACT model use CHWs and what were the specific ways they were able to improve the quality of care for patients? How sustainable would be the related quality of care improvement initiatives?

example, Harrison Community Health Center (HCHC) is an FQHC located in a midsized city in rural Virginia, which has a major refugee resettlement population as well as many rural regions. HCHC used results from a community needs assessment, which identified mental health as the top health concern, to implement a rapid-cycle improvement process to improve depression screening and community-based follow-up. This QCI project increased depression screening from 9% to 71%. Adherence to follow-up with community mental health services increased from a baseline of 33.3 to 60.0%. Stakeholders influenced

Discussion Box 9.3: Patient Screening Protocols

Federally Qualified Health Centers (FQHCs) provide comprehensive primary care services, including mental health and dental care, to low-income and uninsured populations. In recent years, FQHCs have expanded their patient screening protocols to identify mental health conditions, particularly depression, and the social determinants of health. The two examples described above show how FQHCs have been successful in not only screening for depression and social problems, but also how they have improved the quality of care through their follow-up efforts.

What Do You Think?

1. What are the sustainable health system quality implications of early screening for mental health conditions and the social determinants of health?
2. Why is it important to follow-up on screening results if problems are detected?

process changes to make screening and follow-up care culturally appropriate for this community (Schaeffer & Joelles, 2019).

Other health centers are developing and implementing protocols to screen for social determinants of health as part of QCI projects. For example, Albuquerque's WellRx pilot systematically screened for and addressed patients' social needs during every visit. Using an 11-question instrument, the multidisciplinary team screened all patients at all visits for social determinants in three family medicine clinics over 90 days. They found that nearly half (46%) of patients screened positive for at least one area of social need. Among those, nearly two-thirds (63%) screened positive for multiple needs, most of which were previously unknown to the clinicians. Medical assistants (MAs) and CHWs connected patients with appropriate community services and resources. Using MAs to identify social needs and CHWs to intervene and refer led to a lighter workload for providers and more insight into the complex needs of patients. This QCI project demonstrated that it is feasible to implement social determinant assessments at all patient visits in a busy general practice setting. Subsequently, a university teaching hospital adopted the WellRx model, and the New Mexico Department of Health now requires MCOs to use CHWs for Medicaid patients (Page-Reeves et al., 2016).

Prospective Organizational Approaches

According to the U.S. Department of Health and Human Services, “QI activities provide an organization with opportunities to ‘think outside the box’ and promote creativity and innovation” (HRSA, 2011). The outside-the-box thinking, creativity, and innovation that underpin QCI are critical for us to test and sustain new approaches to community health.

The *Plan-Do-Study-Act* (PDSA) cycle is used by many health organizations to make improvements in quality (see Fig. 9.3). It offers an iterative process of developing a plan to test a small-scale change, implementing the change, observing and learning from the change, and determining what modifications should be made and whether the change is scalable. The PDSA cycle illustrates that QCI involves proactive problem solving and a culture of learning. The PDSA cycle answers the following questions:

1. What are the data telling us about how things work?
2. Can we test changes to improve quality?
3. What do the data tell us about whether we should scale up those changes?

Clinical pathways are another strategy to improve quality at the organizational level, and they have been used frequently in the United States and western Europe. Clinical pathways are based on evidence-based studies and adapted by physicians and other health care professionals to the culture of the organization. They can be used to improve processes for a



Fig. 9.3 Plan-Do-Study-Act cycle

variety of treatments, including stroke therapy, infection controls, follow-up of hospital discharges, and patient malnourishment. Clinical pathways have improved patient outcomes and reduced readmissions (European Observatory on Health Systems and Policies, 2019).

Another organizational quality strategy is *patient safety culture*. The goal is to change the culture and patterns of behavior in the organization so there is a strong commitment to and proficiency in the organization's health and safety. The patient safety culture is characterized by shared behavioral patterns involving communication, teamwork, working conditions, and outcome measures (e.g., frequency of adverse reporting). It can contribute to the quality of care by creating a new environment for safety and behaviors by developing new structures and processes. One European study found positive associations between the implementation of quality management systems and a teamwork and safety climate. The most effective interventions were team training and communication initiatives and executive or interdisciplinary walk-rounds (European Observatory on Health Systems and Policies, 2019).

The QCI framework also involves meeting patient's needs. In developing countries, the effectiveness of quality strategies may depend on meeting their primary prevention needs (see also Chap. 7, this volume). For example, in Zimbabwe, lay workers are used to screen and identify common mental disorders (Mangezi & Chibanda, 2010). In India, a mobile blood monitoring device is being tested to provide cost-effective diabetes management. This device allows any mobile phone to monitor blood glucose by lay workers and patients. It is anticipated that up to 3 million people will use this device (Grand Challenges Canada, 2019).

In most developed countries other than the United States, there is universal health insurance coverage. Although universal coverage does not assure high quality, it provides a more centralized data collection system that can track the health status of patients and better identify health disparities. In Taiwan, for example, providers receive extra bonuses for serving patients in remote or mountainous areas (Cheng, Chen, & Hou, 2010). Taiwan also has payment incentives that are tied to QCI for illnesses such as asthma and diabetes, as well as widespread information sharing and transparency that help to identify high-risk patients, improve quality, and reduce waste (Cheng, 2015). Finally, the government is

attempting to change incentives to address continuity of care problems related to “physician shopping behaviors.” Patients in Taiwan tend to seek medical help frequently, leading to a high number of physician visits and less time with each patient. As a result, specialists may spend less time with patients that have serious problems. These patients often end up in the hospital when it could have been avoided (Cheng et al., 2010). To overcome this problem and reduce avoidable hospitalizations, financial incentives are provided in the form of lower copayments if a patient first sees a primary care physician and is then referred for specialty care (Cheng et al., 2010).

Germany also has universal coverage and robust data to track the health of patients (Nasser & Sawicki, 2019). All hospitals are required to report findings on various indicators, allowing hospital comparisons. Volume thresholds have also been established to assure that they are performing a minimum number of complex procedures. Germany relies on its public health system to address health disparities, and care coordination projects are underway to treat patients with two or more chronic conditions.

Cultural, Professional, Legislative, and Capacity Issues Impacting QCI

Some experts would be concerned that using the health care system and clinicians to address nonmedical needs (through Section 1115 waivers or otherwise) runs the risk of medicalizing complex social issues. Similarly, some medical staff would be skeptical and question the value of nonclinical services or the use of nonclinical staff. For example, CHWs are effective because they are trusted members of the community where they serve (Grant et al., 2017). As health care organizations begin to integrate CHWs into their teams, it often creates a fundamental tension between clinical and nonclinical staff. “The marriage of community health and formal health care is powerful, but it’s also tricky. If CHWs lose their identity and become medicalized, their effectiveness in the community is lessened. Health care leaders must grapple with a fundamental question:

How do we integrate a grassroots workforce into health care without totally co-opting it?” (Garfield & Kangovi, 2019).

Another major issue is how to share data between health care organizations and public health, social service agencies, and other community-based organizations (e.g., the housing authority; Walport & Brest, 2011). Major challenges include regulatory issues, privacy concerns, and interoperability of systems. In addition, some community-based organizations do not have electronic records for sharing their data important to community health (see also Chap. 10, this volume).

Capacity building is another significant and ongoing challenge. Building care coordination models that integrate medical and nonmedical services requires both health care and non-health care organizations to build capacity by investing funds upfront, but it may be several months or years before these investments are paid back (see also Chap. 6, this volume). In many cases, both health care and nonmedical organizations may have to hire new staff or at least train old staff. They may have to upgrade their data and analytic information systems and offer new types of services. Many of these services are costly and some organizations may be unwilling or not have the ability to make these necessary investments, especially when a positive return on their investment may take several years.

Additionally, the wide variation between and within states presents challenges in moving toward a robust model of sustainable community health. Although some states such as Oregon, Vermont, and California have used their Medicaid programs to pursue innovative solutions very aggressively, other states—many of which bear the brunt of significant health disparities—have moved forward at a much slower pace.

Finally, the successful implementation of a sustainable community health model that incorporates a broad concept of QCI often depends on scale or volume. In many rural areas, for example, low population densities make it very difficult to maintain a sufficient volume of patients to make this model economically sustainable. In addition, many health care and community-based organizations in rural areas also have a difficult time recruiting and retaining health professionals and other staff (Struber, 2004). Without adequate and qualified staff, it is less likely that innovative value-based Medicaid models will be implemented.

Relevance to Disciplines and Specialty Areas

Sustainable community health depends on many factors, including economic vitality, education, the environment, and community safety for all. In pursuit of these objectives, quality must be the major focus of a sustainable community health model. QCI—in the context of population and community health metrics—should be of interest to formal health care providers, such as physicians, nurses, and hospital administrators. Allied health professionals, including those working in mental and behavioral health, social work, nutritional science, physical therapy, and occupational therapy, also have a clear stake in using the tools and practices of QCI to promote sustainable community health. Those working outside of the health care system to address the nonmedical needs of their constituencies, especially in community-based organizations, are also invested in this nexus. More broadly, those who promote health by focusing on interventions at the program, policy, and system levels have a unique opportunity to advance sustainable community health through QCI. Specifically, those working in local and regional governments, including public health departments, social service agencies, housing authorities, and public transportation, among many others, should integrate these concepts into their work.

Public Health To move the needle upstream and to improve community health, local and state public health agencies need to assume a leadership role and act as the Chief Health Strategists for their communities. As described in the *Public Health 3.0 Call to Action*, Chief Health Strategists form vibrant, structured, cross-sector partnerships that leverage the strengths of each organization (DeSalvo et al., 2017). Researchers agree that this collective power of diverse organizations and individuals has the capacity to improve the health of a community. Thus, building collaborative partnerships is a widely promoted strategy to improve the community health outcomes through coordination of services and sharing of information, expertise, and resources (DeSalvo et al., 2017). The sort of multi-sector collaboration envisioned within the Public Health 3.0 framework is uniquely suited to the local level, and those working to

improve the social, environmental, and economic conditions that influence health must be forward-thinking catalysts of change who anchor their interventions in a QCI approach.

QCI should be of great interest to *Health Economists* because most of the innovative models are not only designed to improve the quality of care for individual patients and health outcomes for populations but also to control the cost of health care services. There is also an opportunity to examine the cost-effectiveness and value of the nonmedical interventions.

QCI is very relevant to *Epidemiologists* because many of these models described in this chapter have the potential to improve the health of the populations across communities and reduce health disparities across populations. Epidemiologists have the knowledge and tools to investigate how effective these models have been in making improvements in population health. Those working in *Health Services Administration* have the opportunity to compare and test the effectiveness and efficiency of these models across regions and states. It also provides an opportunity to refine and suggest changes in health policy.

Issues for Research and Other Forms of Scholarship on QCI

There are many research issues related to QCI best practices and their impact on health equity, health disparities, and social justice. First, many studies have found that both medical and nonmedical factors influence the health of populations (Fraze et al. 2016). In many instances, however, there is limited evidence about what specific strategic interventions should be implemented to address the social determinants of health. For example, it is well documented that housing supports are important and even critical to improve the health of many low-income people (Jacobs, Wilson, Dixon, Smith, & Evens, 2009). Unfortunately, there is less knowledge about what specific housing supports are most cost-effective in improving health outcomes (Fraze et al., 2016). Implementing the most cost-effective programs is essential because only limited resources are available in the society to address unmet social needs.

Another research issue is to determine the most effective care coordination strategies and the most appropriate balance in the delivery of programs and services between health care, public health, and social services. Ideally, all patients should have a medical home and be screened for risk factors, including the social determinants of health (see Chap. 10, this volume). High-risk patients should then receive some combination of medical services, behavioral health services, public health services, and social services. More research is needed about the most effective combination of services for specific types of patients (e.g., chronic disease, pregnant women, and adolescent children).

A third research issue relates to building effective collaborative partnerships between health care and community-based organizations. Past research studies have found that collaborative partnerships that have strong leaders and a shared vision can lead to more positive health outcomes (Roussos & Fawcett, 2000). However, many partnerships fail because of the cultural divide and the tension that exists between health care and community-based organizations. For example, there may be differences in language or approaches (individual treatment vs whole populations) to supporting low-income populations (Alderwick et al., 2019). Since one of the keys to better population health outcomes is effective collaborative partnerships, it is critical to have a better understanding of the barriers that exist between health care and community organizations and what strategies can be used to overcome them.

Finally, more research is needed about what types of training, education, and competencies are needed for the staff who serve on the health care and community health teams (Mitchell et al., 2012). Providing high-quality care that addresses health equity and health disparities requires new skills and competencies (screening, home visitation, data analysis, and coalition building) and new types of workers, such as CHWs. Future research can help communities to understand the most appropriate balance and the most essential workers in various geographical areas (e.g., underserved rural and urban areas).

Using several different approaches, many states have used their Medicaid programs to drive change in the way health care is delivered and reimbursed. All of these models emphasize a broad QCI approach that goes beyond individual treatment outcomes and moves upstream to

address many of the social determinants of health. States are using new models such as ACOs and ACHs and retooling old models (e.g., MCOs) to generate quality improvements across the individual and population health spectrum. Although these new models are driving change and producing many favorable results, especially in QCI, it is also clear that more time is needed before major shifts in population health outcomes can be seen (Matulis & Lloyd, 2018). An evaluation of the investment in social needs in Oregon and California found that successfully addressing the social needs in the community depends on the availability of services in the community. In each of the sites studied, “the scale of Medicaid patients’ unmet social needs – for housing, food, income, and more – outstripped the resources available to address them” (Alderwick et al., 2019: 779). Many community-based organizations also have limited capacity, including adequate staff, training and competencies, and IT technology (Alderwick et al., 2019). On the positive side, many strong partnerships have been formed between health care providers and public health and other community-based organizations. These partnerships have created not only a greater awareness of the nonmedical determinants of health, but have also led to the implementation of intervention strategies to address high-need patients.

Summary and Conclusions

Quality must underpin any vision for sustainable community health. Increasing the effectiveness and efficiency of the infrastructure that supports community health demands robust and evidence-based quality improvement principles and practices that are safe, effective, patient-centered, timely, efficient, and equitable. New health care delivery models and payment reforms have been implemented primarily through state Medicaid and Medicare programs, and these have greatly expanded the concept of QCI. Many of these new health delivery approaches provide strong incentives to improve health care treatment for individuals and screen for and address the social determinants of health. Although the QCI concept has been expanded, many barriers still exist and must be overcome before the goals of sustainable community health can be

achieved. However, this broader QCI vision and the multi-sector partnerships that have been formed to achieve the vision have changed the health system from a focus on improving the outcomes of individual patients to improving the outcomes of populations.

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