Systems Practices

FOR THE CARE OF

Socially At-Risk Populations

Committee on Accounting for Socioeconomic Status in Medicare Payment Programs

Board on Population Health and Public Health Practice

Board on Health Care Services

Health and Medicine Division

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Reviewers

This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their review of this report:

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Although the reviewers listed above have provided many constructive comments and suggestions, they were not asked to endorse the conclusions or recommendations nor did they see the final draft of the report before its release. The review of this report was overseen by **GEORGES C. BENJAMIN,** American Public Health Association, and **CHARLES E. PHELPS,** University of Rochester. They were responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the authoring committee and the institution.

Acknowledgments

Contents

Summary

The Centers for Medicare & Medicaid Services (CMS) have been moving from volume-based, fee-for-service payment to value-based payment (VBP), which aims to improve health care quality, health outcomes, and patient care experiences, while also controlling costs. Since the passage of the Patient Protection and Affordable Care Act in 2010, CMS has implemented a variety of VBP strategies, including incentive programs and risk-based alternative payment models such as bundled (episode-based) payments and accountable care organizations (Burwell, 2015). Emerging evidence suggests that providers disproportionately serving patients with social risk factors for poor health outcomes may be more likely to fare poorly on quality rankings and to receive financial penalties, and less likely to receive financial rewards (Berenson and Shih, 2012; Chien et al., 2007; Friedberg et al., 2010; Gilman et al., 2014, 2015; Joynt and Jha, 2013; Joynt and Rosenthal, 2012; Joynt et al., 2011; Karve et al., 2008; Ly et al., 2010; MedPAC, 2013; Mehta et al., 2008; Rajaram et al., 2015; Ryan, 2013; Shih et al., 2015; Sjoding and Cooke, 2014; Williams et al., 2014). However, an analysis of actual penalties incurred under the Hospital Readmissions Reduction Program for fiscal year 2013 reported that safety-net hospitals incurred only slightly higher penalties than non–safety-net hospitals (Sheingold et al., 2016). The drivers of these disparities in both health care quality and health outcomes are poorly understood, and differences in interpretation have led to divergent concerns about the potential effect of VBP on health equity.[1]

STATEMENT OF TASK

In an effort to better distinguish the drivers of variations in performance among providers disproportionately serving socially at-risk populations and to identify methods to account for social risk factors in Medicare payment programs, the Department of Health and Human Services acting through the Office of the Assistant Secretary of Planning and Evaluation (ASPE), contracted with the National Academies of Sciences, Engineering, and Medicine to convene an ad hoc committee to identify best practices of high-performing hospitals, health plans, and other providers that serve disproportionately higher shares of socioeconomically disadvantaged populations and compare those best practices to practices of low-performing providers serving similar patient populations. The committee comprises expertise in health care quality, clinical medicine, health services research, health disparities, social determinants of health, risk

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[1] Health equity means that every person has the opportunity to attain his or her full health potential and no one is disadvantaged from achieving this potential because of social position or other socially determined circumstances. A health disparity refers to a difference in a health outcome or a health determinant between populations (CDC, 2015).

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adjustment, and Medicare programs (see Appendix B for biographical sketches). This report is the second in a series of five brief reports that aim to inform ASPE analyses that account for social risk factors in Medicare payment programs mandated through the Improving Medicare Post-Acute Care Transformation (IMPACT) Act. In its first report (NASEM, 2016), the committee presented a conceptual framework and described the results of a literature search linking five social risk factors (socioeconomic position; race, ethnicity, and cultural context; gender; social relationships; and residential and community context) and health literacy to health-related measures of importance to Medicare payment and quality programs. Details of the statement of task and the sequence of reports can be found in Box 1-1. The committee will release reports every 3 months, addressing each item in the statement of task in turn. The statement of task requests committee recommendations only in the fourth report.

PERFORMANCE OF PROVIDERS DISPROPORTIONATELY SERVING SOCIALLY AT-RISK POPULATIONS

As described in the committee's first report (NASEM, 2016), socially at-risk populations include individuals with social risk factors for poor health outcomes such as low socioeconomic position, social isolation, residing in a disadvantaged neighborhood, identifying as a racial or an ethnic minority, having a non-normative gender or sexual orientation, and having limited health literacy. Although these populations receive care from a wide range of providers, they are disproportionately represented among the patients treated by a small subset of providers, including safety-net hospitals, minority-serving institutions, critical access hospitals, and community health centers (Bach et al., 2004; Jha et al., 2007, 2008). Evidence suggests the performance of these providers may differ systematically from providers serving the general population. In particular, hospitals disproportionately serving socially at-risk populations may provide lower-quality care and have worse patient outcomes compared to hospitals serving the general population on average (Girotra et al., 2012; Jha et al., 2011; Popescu et al., 2009). However, there is also evidence of substantial variation in performance among these providers, and some achieve performance scores on par with the top performers among all hospitals (Gaskin et al., 2011; Jha et al., 2008). Additionally, literature suggests that the performance of safety-net and minority-serving providers of ambulatory care is more mixed, and in many cases better compared to providers serving the general population (Goldman et al., 2012; Hall et al., 2014; Laiteerapong et al., 2014; Lopez et al., 2015; O'Malley et al., 2007; Rothkopf et al., 2011; Sequist et al., 2008).

The committee also considered using publicly reported performance data from providers relevant to Medicare beneficiaries—Medicare Hospital Compare hospital data and Medicare Advantage and Medicare Part D Star Ratings health plan data—to identify high-performing providers disproportionately serving socially at-risk populations. To do so would have engaged the committee in original empirical research, uncommon in reports from the Academies, especially given the time frame the committee faces. The committee identified several challenges to identifying universally high performers. As described in the literature (e.g., Gaskin et al., 2011; Girotra et al., 2012; Jha et al., 2005, 2008; McHugh et al., 2014), there exists substantial variability in performance across measures and practice areas within organizations and across time for all providers. Individual providers perform well and poorly on different measures and in different practice areas. Moreover, there is little stability in performance over time, such that a high performer one year may perform poorly the next. Additionally, a provider's performance on

any individual measure or domain may not generalize to its overall performance and vice versa (Medicare.gov, n.d.; Shwartz et al., 2011).

Given these challenges, the committee did not embark on original research and depended on the published literature described above. Therefore, the committee was unable to identify high- or low-performing providers if interpreted as universally high or low performers across all providers, let alone those disproportionately serving socially at-risk populations. As a result, the committee was also unable to identify high- or low-performing providers who disproportionately serve socially at-risk populations. Despite these challenges:

> The committee found that some providers disproportionately serving socially at-risk populations achieved performance that was higher than their peer organizations and on par with the highest performers among all providers.

PRACTICES TO IMPROVE CARE FOR SOCIALLY AT-RISK POPULATIONS

The complex, interacting nature of the drivers of variation in the quality of care and health care outcomes makes it difficult to draw clear conclusions about what precisely drives this variation among providers that disproportionately serve socially at-risk populations. Combined with the fact that, as described in the previous section, the committee was unable to identify universally high- or low-performing providers, it follows that it is also problematic to then identify practices associated with the performance of universally high- and low-performing providers, let alone among those disproportionately serving socially at-risk populations, and to make comparisons between them. Thus, the committee turned to case studies to identify specific practices used either to improve performance or achieve high performance for socially at-risk populations or to mitigate the effects of social risk factors on their patient population's health outcomes within specific facilities.

The committee reviewed both the peer-reviewed and grey literature in order to identify innovations, interventions, and other strategies providers disproportionately serving socially at-risk populations have implemented to improve care and outcomes for their patients. The committee reached out to organizations known to conduct research or represent providers disproportionately serving socially at-risk populations (Alliance of Community Health Plans, America's Essential Hospitals, America's Health Insurance Plans, and The Commonwealth Fund) and asked for help identifying relevant case studies, especially those that are not within the peer-reviewed published literature. These organizations submitted 60 case studies.

The committee reviewed the case studies submitted, as well as the published literature. The evidence identified through these searches has substantial limitations—few rigorous (controlled) evaluations, unlikely to be generalizable, and limited outcome data. Additionally, the relative performance of individual providers compared to their peers was not well documented. Given these limitations, the committee was not able to identify "best practices" if interpreted as uniform and universal strategies to provide high-quality care for socially at-risk populations and was not able to make comparisons between high- and low-performing providers, even among case studies. Furthermore, because community context is a central determinant of what is needed, acceptable, and feasible in different configurations of problems and resources, universal and uniform "best practices" to improve care for all patients within a population and in all settings may not be desirable (Curry et al., 2011; Joynt et al., 2014). Nevertheless:

The committee found examples of specific strategies implemented in specific community contexts by providers serving socially at-risk populations with the goal to improve health care quality and health outcomes.

IDENTIFYING SYSTEMS PRACTICES

Committee members identified commonalities from the review of the case studies, informed also by the literature and, in some cases, members' empirical research or professional experience delivering care to socially at-risk populations. The common themes describe a set of practices delivered within a system of collaborating partners, not to specific health care interventions, and are consonant with research findings from the quality improvement literature and related clinical interventions designed to decrease disparities. Note that "system" as used here is not limited to a single health care organization, but refers more generally to a set of interconnected actors who work together to accomplish a common purpose—in this case to improve health equity and outcomes for socially at-risk populations. In this approach, the system is mainly composed of medical providers as well as partnering social service agencies, public health agencies, community organizations, and the community in which those medical providers are embedded. The medical providers may be formally (i.e., through legal arrangements) or informally related to the external partners, but all serve the same community or geographic region. These practices pertain to all health systems that serve socially at-risk populations, not only those providers disproportionately serving socially at-risk populations use.

The committee concluded that six community-informed and patient-centered systems practices show promise for improving care for socially at-risk populations:

- *Commitment to health equity: Value and promote health equity and hold yourself accountable*
- *Data and measurement: Understand your population's health, risk factors, and patterns of care*
- *Comprehensive needs assessment: Identify, anticipate, and respond to clinical and social needs*
- *Collaborative partnerships: Collaborate within and across provider teams and service sectors to deliver care*
- *Care continuity: Plan care and care transitions to prepare for patients' changing clinical and social needs*
- *Engaging patients in their care: Design individualized care to promote the health of individuals in the community setting*

As shown in Figure S-1, the committee conceives of this system as grounded in community-informed and patient-centered care and emerging out of a commitment to health equity. This commitment supports and drives the other population-based practices, resulting in individualized care that promotes the health of the patient in his or her community context. Although in reality, a provider simultaneously engages in each system practice, each practice captures a thought process and set of decisions that logically influence the next. For example, a system may already conduct a comprehensive needs assessment, but this assessment will be fundamentally different when driven by a commitment to health equity and includes social needs

in addition to clinical needs. The value and resources that flow from this commitment drive changes in other processes, such as collaborating with social service agencies in the community, which supports enhanced planning for care transitions. Finally, the hard work of providing high-quality care is never done; this systems approach provides a continuous process for improvement.
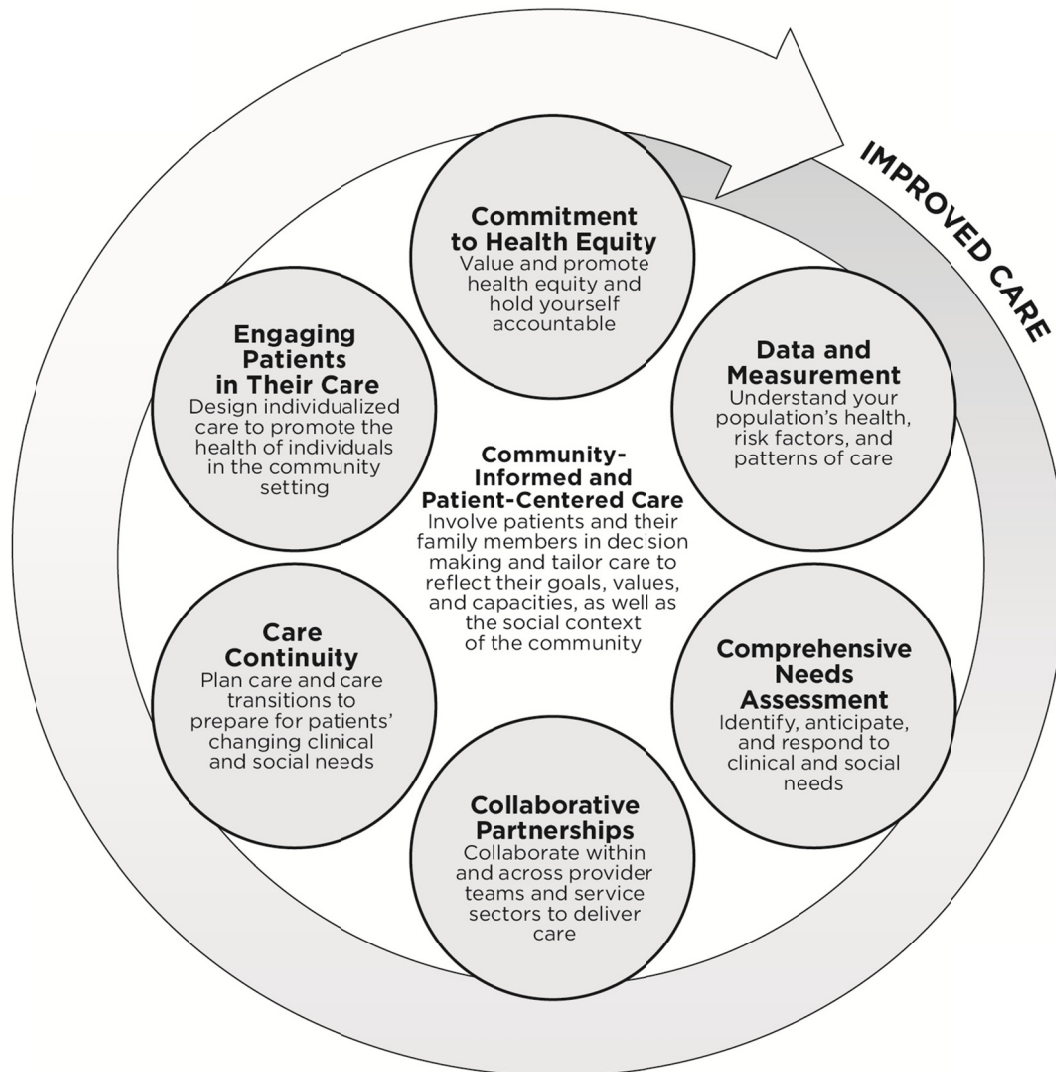

FIGURE S-1 Promising systems practices to improve care for socially at-risk populations.

RESOURCE AND SUSTAINABILITY CONSIDERATIONS

Both the availability of resources and the alignment of financial incentives that makes practices to improve the quality of care, health, and other outcomes for socially at-risk populations sustainable are prerequisites for the adoption and sustainability of these practices and programs. Health systems can incentivize reducing disparities by not only explicitly directing resources to reduce disparities or targeting interventions at socially at-risk populations (such as greater investment in safety-net systems), but also by incorporating equitable care and outcomes into accountability processes (e.g., Berenson and Shih, 2012; Chin, 2016; Zuckerman et al., 2016).

In terms of sustainability, interventions that improve health and quality of care or reduce utilization and cost are only feasible to maintain if the provider is paid in such a way that profits (revenues minus costs) are higher with the intervention than without (e.g., global payment, shared savings, financial incentives). Because most of the efforts described in this report involve fixed costs and potentially shared benefits across multiple payers, their economic feasibility depends not only on Medicare's payment system but also that of other payers. As health care systems increasingly partner with external organizations and other sectors, this will include non–health care stakeholders as well (e.g., Corrigan and Fisher, 2014). All things equal, environments in which a greater share of a provider's revenue is derived from such VBP methods will make it more sustainable for providers to invest in programs that generate value (improved quality and reduced cost).

PUTTING THIS REPORT IN CONTEXT

The committee's task in this report centered on identifying what high-quality health systems serving socially at-risk populations do to achieve good health outcomes for their patients. As the committee described, it is possible to deliver high-quality care to these populations and the committee outlined certain systems practices that could be instrumental in achieving that goal. In the next and third report, the committee returns to the question of which social risk factors could be accounted for in Medicare value-based purchasing programs and how. Nothing in this second report should be interpreted as foreshadowing what the committee will conclude in the third report. However, this report does show that socially at-risk populations do not need to experience low-quality care and bad health care outcomes. With adequate resources, providers can feasibly respond to incentives to deliver high-quality and good value care to socially at-risk populations.

REFERENCES

Bach, P. B., H. H. Pham, D. Schrag, R. C. Tate, and J. L. Hargraves. 2004. Primary care physicians who treat blacks and whites. *New England Journal of Medicine* 351(6):575–584.

Berenson, J., and A. Shih. 2012. Higher readmissions at safety-net hospitals and potential policy solutions. *Issue Brief (Commonwealth Fund)* 34:1–16.

Burwell, S. M. 2015. Setting value-based payment goals—HHS efforts to improve U.S. health care. *New England Journal of Medicine* 372(10):897–899.

CDC (Centers for Disease Control and Prevention). 2015. *Health equity.* http://www.cdc.gov/chronicdisease/healthequity (accessed February 16, 2016).

Chien, A. T., M. H. Chin, A. M. Davis, and L. P. Casalino. 2007. Pay for performance, public reporting, and racial disparities in health care: How are programs being designed? *Medical Care Research and Review* 64(5 Suppl):283s–304s.

Chin, M. H. 2016. Creating the business case for achieving health equity. *Journal of General Internal Medicine* [Epub ahead of print].

Corrigan, J. M., and E. S. Fisher. 2014. *Accountable health communities: Insights from state health reform initiatives*. http://tdi.dartmouth.edu/images/uploads/AccountHealthComm-WhPaperFinal.pdf (accessed March 7, 2016).

Curry, L. A., E. Spatz, E. Cherlin, J. W. Thompson, D. Berg, H. H. Ting, C. Decker, H. M. Krumholz, and E. H. Bradley. 2011. What distinguishes top-performing hospitals in acute myocardial infarction mortality rates? A qualitative study. *Annals of Internal Medicine* 154(6):384–390.

Friedberg, M. W., D. G. Safran, K. Coltin, M. Dresser, and E. C. Schneider. 2010. Paying for performance in primary care: Potential impact on practices and disparities. *Health Affairs* 29(5):926–932.

Gaskin, D. J., C. S. Spencer, P. Richard, G. Anderson, N. R. Powe, and T. A. LaVeist. 2011. Do minority patients use lower quality hospitals? *Inquiry* 48(3):209–220.

Gilman, M., E. K. Adams, J. M. Hockenberry, I. B. Wilson, A. S. Milstein, and E. R. Becker. 2014. California safety-net hospitals likely to be penalized by ACA value, readmission, and meaningful-use programs. *Health Affairs* 33(8):1314–1322.

Gilman, M., E. K. Adams, J. M. Hockenberry, A. S. Milstein, I. B. Wilson, and E. R. Becker. 2015. Safety-net hospitals more likely than other hospitals to fare poorly under Medicare's value-based purchasing. *Health Affairs* 34(3):398–405.

Girotra, S., P. Cram, and I. Popescu. 2012. Patient satisfaction at America's lowest performing hospitals. *Circulation: Cardiovascular Outcomes and Quality* 5(3):365–372.

Goldman, L. E., P. W. Chu, H. Tran, M. J. Romano, and R. S. Stafford. 2012. Federally qualified health centers and private practice performance on ambulatory care measures. *American Journal of Preventive Medicine* 43(2):142–149.

Hall, Y. N., P. Xu, G. M. Chertow, and J. Himmelfarb. 2014. Characteristics and performance of minority-serving dialysis facilities. *Health Services Research Journal* 49(3):971–991.

Jha, A. K., Z. Li, E. J. Orav, and A. M. Epstein. 2005. Care in U.S. hospitals—the hospital quality alliance program. *New England Journal of Medicine* 353(3):265–274.

Jha, A. K., E. J. Orav, Z. Li, and A. M. Epstein. 2007. Concentration and quality of hospitals that care for elderly black patients. *Archives of Internal Medicine* 167(11):1177–1182.

Jha, A. K., E. J. Orav, J. Zheng, and A. M. Epstein. 2008. The characteristics and performance of hospitals that care for elderly Hispanic Americans. *Health Affairs* 27(2):528–537.

Jha, A. K., E. J. Orav, and A. M. Epstein. 2011. Low-quality, high-cost hospitals, mainly in South, care for sharply higher shares of elderly black, Hispanic, and Medicaid patients. *Health Affairs* 30(10):1904–1911.

Joynt, K. E., and A. K. Jha. 2013. A path forward on Medicare readmissions. *New England Journal of Medicine* 368(13):1175–1177.

Joynt, K. E., and M. B. Rosenthal. 2012. Hospital value-based purchasing: Will Medicare's new policy exacerbate disparities? *Circulation: Cardiovascular Outcomes and Quality* 5(2):148–149.

Joynt, K. E., E. J. Orav, and A. K. Jha. 2011. Thirty-day readmission rates for Medicare beneficiaries by race and site of care. *Journal of the American Medical Association* 305(7):675–681.

Joynt, K. E., N. Sarma, A. M. Epstein, A. K. Jha, and J. S. Weissman. 2014. Challenges in reducing readmissions: Lessons from leadership and frontline personnel at eight minority-serving hospitals. *The Joint Commission Journal on Quality and Patient Safety* 40(10):435–437.

Karve, A. M., F. S. Ou, B. L. Lytle, and E. D. Peterson. 2008. Potential unintended financial consequences of pay-for-performance on the quality of care for minority patients. *American Heart Journal* 155(3):571–576.

Laiteerapong, N., J. Kirby, Y. Gao, T. C. Yu, R. Sharma, R. Nocon, S. M. Lee, M. H. Chin, A. G. Nathan, Q. Ngo-Metzger, and E. S. Huang. 2014. Health care utilization and receipt of preventive care for patients seen at federally funded health centers compared to other sites of primary care. *Health Services Research Journal* 49(5):1498–1518.

Lopez, L., N. Cook, and L. Hicks. 2015. Improved quality of care for cardiovascular disease for Latinos seen in high proportion Latino vs. low proportion Latino clinics. *Ethnicity & Disease* 25(1):3–10.

Ly, D. P., L. Lopez, T. Isaac, and A. K. Jha. 2010. How do black-serving hospitals perform on patient safety indicators?: Implications for national public reporting and pay-for-performance. *Medical Care* 48(12):1133–1137.

McHugh, M., J. Neimeyer, E. Powell, R. K. Khare, and J. G. Adams. 2014. Is emergency department quality related to other hospital quality domains? *Academic Emergency Medicine* 21(5):551–557.

Medicare.gov. n.d. *About hospital compare data*. https://www.medicare.gov/hospitalcompare/Data/About.html (accessed February 16, 2016).

MedPAC (Medicare Payment Advisory Commission). 2013. Chapter 4: Refining the hospital readmissions reduction program. In *Report to the Congress: Medicare and the health care delivery system.* Washington, DC: MedPAC.

Mehta, R. H., L. Liang, A. M. Karve, A. F. Hernandez, J. S. Rumsfeld, G. C. Fonarow, and E. D. Peterson. 2008. Association of patient case-mix adjustment, hospital process performance rankings, and eligibility for financial incentives. *Journal of the American Medical Association* 300(16):1897–1903.

NASEM (National Academies of Sciences, Engineering, and Medicine). 2016. *Accounting for social risk factors in medicare payment: Identifying social risk factors*. Washington, DC: The National Academies Press.

O'Malley, A. S., H. H. Pham, D. Schrag, B. Wu, and P. B. Bach. 2007. Potentially avoidable hospitalizations for COPD and pneumonia: The role of physician and practice characteristics. *Medical Care* 45(6):562–570.

Popescu, I., R. M. Werner, M. S. Vaughan-Sarrazin, and P. Cram. 2009. Characteristics and outcomes of America's lowest-performing hospitals: An analysis of acute myocardial infarction hospital care in the United States. *Circulation: Cardiovascular Outcomes and Quality* 2(3):221–227.

Rajaram, R., J. W. Chung, C. V. Kinnier, C. Barnard, S. Mohanty, E. S. Pavey, M. C. McHugh, and K. Y. Bilimoria. 2015. Hospital characteristics associated with penalties in the Centers for Medicare & Medicaid Services hospital-acquired condition reduction program. *Journal of the American Medical Association* 314(4):375–383.

Rothkopf, J., K. Brookler, S. Wadhwa, and M. Sajovetz. 2011. Medicaid patients seen at federally qualified health centers use hospital services less than those seen by private providers. *Health Affairs (Millwood)* 30(7):1335–1342.

Ryan, A. M. 2013. Will value-based purchasing increase disparities in care? *New England Journal of Medicine* 369(26):2472–2474.

Sequist, T. D., G. M. Fitzmaurice, R. Marshall, S. Shaykevich, D. G. Safran, and J. Z. Ayanian. 2008. Physician performance and racial disparities in diabetes mellitus care. *Archives of Internal Medicine* 168(11):1145–1151.

Sheingold, S. H., R. Zuckerman, and A. Shartzer. 2016. Understanding Medicare hospital readmission rates and differing penalties between safety-net and other hospitals. *Health Affairs* 35(1):124–131.

Shih, T., A. M. Ryan, A. A. Gonzalez, and J. B. Dimick. 2015. Medicare's hospital readmissions reduction program in surgery may disproportionately affect minority-serving hospitals. *Annals of Surgery* 261(6):1027–1031.

Shwartz, M., A. B. Cohen, J. D. Restuccia, Z. J. Ren, A. Labonte, C. Theokary, R. Kang, and J. Horwitt. 2011. How well can we identify the high-performing hospital? *Medical Care Research and Review* 68(3):290–310.

Sjoding, M. W., and C. R. Cooke. 2014. Readmission penalties for chronic obstructive pulmonary disease will further stress hospitals caring for vulnerable patient populations. *American Journal of Respiratory and Critical Care Medicine* 190(9):1072–1074.

Williams, K. A., Sr., A. A. Javed, M. S. Hamid, and A. M. Williams. 2014. Medicare readmission penalties in Detroit. *New England Journal of Medicine* 371(11):1077–1078.

Zuckerman, D., V. Duncan, and K. Parker. 2016. *Building a culture of health equity at the federal level*. http://nam.edu/wp-content/uploads/2016/03/Building-a-Culture-of-Health-Equity-at-the-Federal-Level.pdf (accessed March 10, 2016).

1

Introduction

The Centers for Medicare & Medicaid Services (CMS) have been moving from volume-based, fee-for-service payment to value-based payment (VBP), which aims to improve health care quality, health outcomes, and patient care experiences, while also controlling costs. Since the passage of the Patient Protection and Affordable Care Act in 2010, CMS has implemented a variety of VBP strategies, including incentive programs and risk-based alternative payment models such as bundled (episode-based) payments and accountable care organizations (Burwell, 2015). Early evidence from these programs raised concerns about potential unintended consequences for health equity.[1] Specifically, emerging evidence suggests that providers disproportionately serving patients with social risk factors for poor health outcomes (e.g., individuals with low socioeconomic position [SEP], racial and ethnic minorities, gender and sexual minorities, socially isolated persons, and individuals residing in disadvantaged neighborhoods) may be more likely to fare poorly on quality rankings and to receive financial penalties, and less likely to receive financial rewards (Berenson and Shih, 2012; Chien et al., 2007; Friedberg et al., 2010; Gilman et al., 2014, 2015; Joynt and Jha, 2013; Joynt and Rosenthal, 2012; Joynt et al., 2011; Karve et al., 2008; Ly et al., 2010; MedPAC, 2013; Mehta et al., 2008; Rajaram et al., 2015; Ryan, 2013; Shih et al., 2015; Sjoding and Cooke, 2014; Williams et al., 2014). However, an analysis of actual penalties incurred under the Hospital Readmissions Reduction Program for fiscal year 2013 reported that safety-net hospitals incurred only slightly higher penalties than non–safety-net hospitals (Sheingold et al., 2016).

The drivers of these disparities are poorly understood, and differences in interpretation have led to divergent concerns about the potential effect of VBP on health equity. Some suggest that underlying differences in patient characteristics (including clinical, behavioral, and social risk factors) that are out of the control of providers lead to differences in health outcomes (Jha and Zaslavsky, 2014; Joynt and Jha, 2013). In this view, because providers are being held financially accountable for differences in patient outcomes due to factors beyond their control and because providers disproportionately serving socially at-risk populations are historically less well funded than providers caring for the general population, VBP programs may be taking away resources from providers who need them most (Chien et al., 2007; Ryan, 2013). Moreover,

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[1] Health equity means that every person has the opportunity to attain his or her full health potential and no one is disadvantaged from achieving this potential because of social position or other socially determined circumstances. A health disparity refers to a difference in a health outcome or a health determinant between populations (CDC, 2015).

because socially at-risk populations may require more resources to achieve the same outcomes as the general population, increasing the resource gap may in turn increase health disparities (Bhalla and Kalkut, 2010; Ryan, 2013).

At the same time, others are concerned that differences in outcomes between providers serving socially at-risk populations and providers serving the general population reflect disparities in the provision of health care (Krumholz and Bernheim, 2014), because studies have shown that socially at-risk populations including racial and ethnic minorities, low-income persons, gender and sexual minorities, and other disadvantaged groups receive poorer quality health care, experience poorer health, and are more likely to receive care from lower-quality providers (Bach et al., 2004; Girotra et al., 2012; IOM, 2000, 2003, 2011; Jha et al., 2007, 2008, 2011; Popescu et al., 2009). In this view, VBP is a mechanism to hold those who provide lower-quality care accountable and to incentivize improvement (Bernheim, 2014). The reality of observed lower-quality care for socially at-risk populations is likely neither entirely beyond the control of payers and providers involved in their care nor entirely the result of lower capabilities or effort on the part of providers and payers. Thus, when considering the effect on health equity of VBP, there will always be an inherent tension between fairness to providers and improving health care and health outcomes for socially at-risk populations. This tension has led some to advocate for accounting for social risk factors in payment methods to promote fairness for providers, and spurred others to implement interventions to address social risk factors to improve health outcomes for socially at-risk populations. At the federal level, Congress passed the Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014, which requires the Secretary of Health and Human Services to submit reports to Congress assessing the impact of and recommending methods to account for socioeconomic status on quality and resource use in Medicare. Additionally, CMS established the Accountable Health Communities initiative in 2016 to assess whether investing in interventions that address health-related social needs can improve health care utilization and costs among Medicare and Medicaid beneficiaries (Alley et al., 2016).

STATEMENT OF TASK

In an effort to better distinguish the drivers of variations in performance among providers disproportionately serving socially at-risk populations and to identify methods to account for social risk factors in Medicare payment programs, the Department of Health and Human Services acting through the Office of the Assistant Secretary of Planning and Evaluation (ASPE) contracted with the National Academies of Sciences, Engineering, and Medicine to convene an ad hoc committee to identify the best practices of high-performing hospitals, health plans, and other providers that serve disproportionately higher shares of socioeconomically disadvantaged populations and compare those best practices to practices of low-performing providers serving similar patient populations. The committee comprises expertise in health care quality, clinical medicine, health services research, health disparities, social determinants of health, risk adjustment, and Medicare programs (see Appendix B for biographical sketches). This report is the second in a series of five brief reports that aim to inform ASPE analyses that account for social risk factors in Medicare payment programs mandated through the IMPACT Act. In its first report (NASEM, 2016), the committee presented a conceptual framework and described the results of a literature search linking five social risk factors (SEP; race, ethnicity, and cultural context; gender; social relationships; and residential and community context) and health literacy

to health-related measures of importance to Medicare payment and quality programs. Details of the statement of task and the sequence of reports can be found in Box 1-1. The committee will release reports every 3 months, addressing each item in the statement of task in turn. The statement of task requests committee recommendations only in the fourth report.

BOX 1-1
Statement of Task

An ad hoc committee will provide a definition of socioeconomic status (SES) for the purposes of application to Medicare quality measurement and payment programs; to identify the social factors that have been shown to impact health outcomes of Medicare beneficiaries; and to specify criteria that could be used in determining which social factors should be accounted for in Medicare quality measurement and payment programs. Further, the committee will identify methods that could be used in the application of these social factors to quality measurement and/or payment methodologies. Finally, the committee will recommend existing or new sources of data and/or strategies for data collection. The committee's work will be conducted in phases and produce five brief reports, which build upon the Institute of Medicine of the National Academies of Sciences, Engineering, and Medicine's previous studies relevant to this study.

The first report will:
- Define socioeconomic status for the purpose of application to quality, resource use, or other measures used for Medicare payment programs.
- Identify SES factors and other social factors (such as race, health literacy, limited English proficiency) that have been shown to impact health outcomes of Medicare beneficiaries.

The second report will:
- Identify best practices of high-performing hospitals, health plans, and other providers that serve disproportionately higher shares of socioeconomically disadvantaged populations and compare those best practices to practices of low-performing providers serving similar patient populations.

The third report will:
- Specify criteria (along with their strengths and weaknesses) that could potentially be used to determine whether an SES factor or other social factor should be accounted for in Medicare quality, resource use, or other measures used in Medicare payment programs.
- Identify SES factors or other social factors that could be incorporated into quality, resource use, or other measures used in Medicare payment programs.
- Identify methods that could be used in the application of SES factors and other social factors to quality, resource use, or other measures used in Medicare payment programs.

The fourth report will:
- For each of the SES factors or other social factors described above, recommend existing or new sources of data on these factors and/or strategies for data collection, while also identifying challenges to obtaining appropriate data and strategies for overcoming these challenges.

In the fifth report:
- The committee will synthesize and interpret the 4 brief reports issued as described above into one report that will include comprehensive project findings, conclusion, and recommendations based on the 4 previous reports.

COMMITTEE PROCESS AND APPROACH

The statement of task contains two key elements: identifying high- and low-performing hospitals, health plans, and other providers (hereafter referred to simply as providers) disproportionately serving socially at-risk populations and identifying best practices of the high-performing providers. The committee reviewed publicly reported performance of hospitals and health plans relevant to the Medicare population to attempt to identify high performers disproportionately serving socially at-risk populations—the Medicare Hospital Compare hospital data and the Medicare Advantage and Medicare Part D Star Ratings for health plan data (CMS, 2015; Medicare.gov, n.d.). The committee also reviewed the published literature examining the performance of providers disproportionately serving socially at-risk populations, including studies of variations in performance among these providers and comparisons to providers serving the general population.

To identify best practices of providers disproportionately serving socially at-risk populations, the committee considered both the published and grey literature. The published literature reviewed focused on targeted innovations, interventions, and other improvement strategies implemented by providers known to disproportionately serve socially at-risk populations—minority-serving institutions, safety-net hospitals, critical access hospitals, and community health centers. Because the committee expected that much of the literature on best practices would exist in the grey literature, it reached out to organizations known to conduct research or represent providers disproportionately serving socially at-risk populations (Alliance of Community Health Plans, America's Essential Hospitals, America's Health Insurance Plans, and The Commonwealth Fund) and asked for help identifying relevant case studies, especially those that are not within the peer-reviewed published literature. These organizations submitted 60 case studies for the committee's consideration.

As will be described in detail in the next and final chapter, the committee identified key themes and commonalities in practices that were shown to improve health care quality and health outcomes for socially at-risk populations in specific provider settings and in specific community contexts.

REFERENCES

Alley, D. E., C. N. Asomugha, P. H. Conway, and D. M. Sanghavi. 2016. Accountable health communities—addressing social needs through Medicare and Medicaid. *New England Journal of Medicine* 374(1):8–11.

Bach, P. B., H. H. Pham, D. Schrag, R. C. Tate, and J. L. Hargraves. 2004. Primary care physicians who treat blacks and whites. *New England Journal of Medicine* 351(6):575–584.

Berenson, J., and A. Shih. 2012. Higher readmissions at safety-net hospitals and potential policy solutions. *Issue Brief (Commonwealth Fund)* 34:1–16.

Bernheim, S. M. 2014. Measuring quality and enacting policy: Readmission rates and socioeconomic factors. *Circulation: Cardiovascular Quality and Outcomes* 7(3):350–352.

Bhalla, R., and G. Kalkut. 2010. Could medicare readmission policy exacerbate health care system inequity? *Annals of Internal Medicine* 152(2):114–117.

Burwell, S. M. 2015. Setting value-based payment goals—HHS efforts to improve U.S. health care. *New England Journal of Medicine* 372(10):897–899.

CDC (Centers for Disease Control and Prevention). 2015. *Health equity*. http://www.cdc.gov/chronicdisease/healthequity (accessed February 16, 2016).

Chien, A. T., M. H. Chin, A. M. Davis, and L. P. Casalino. 2007. Pay for performance, public reporting, and racial disparities in health care: How are programs being designed? *Medical Care Research and Review* 64(5 Suppl):283s–304s.

CMS (Centers for Medicare & Medicaid Services). 2015. *Part C and D performance data*. https://www.cms.gov/medicare/prescription-drug-coverage/prescriptiondrugcovgenin/performancedata.html (accessed February 5, 2016).

Friedberg, M. W., D. G. Safran, K. Coltin, M. Dresser, and E. C. Schneider. 2010. Paying for performance in primary care: Potential impact on practices and disparities. *Health Affairs* 29(5):926–932.

Gilman, M., E. K. Adams, J. M. Hockenberry, I. B. Wilson, A. S. Milstein, and E. R. Becker. 2014. California safety-net hospitals likely to be penalized by ACA value, readmission, and meaningful-use programs. *Health Affairs* 33(8):1314–1322.

Gilman, M., E. K. Adams, J. M. Hockenberry, A. S. Milstein, I. B. Wilson, and E. R. Becker. 2015. Safety-net hospitals more likely than other hospitals to fare poorly under Medicare's value-based purchasing. *Health Affairs* 34(3):398–405.

Girotra, S., P. Cram, and I. Popescu. 2012. Patient satisfaction at America's lowest performing hospitals. *Circulation: Cardiovascular Quality and Outcomes* 5(3):365–372.

IOM (Instiute of Medicine). 2000. *America's health care safety net: Intact but endangered*. Washington, DC: National Academy Press.

IOM. 2003. *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: The National Academies Press.

IOM. 2011. *The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding*. Washington, DC: The National Academies Press

Jha, A. K., and A. M. Zaslavsky. 2014. Quality reporting that addresses disparities in health care. *Journal of the American Medical Association* 312(3):225–226.

Jha, A. K., E. J. Orav, Z. Li, and A. M. Epstein. 2007. Concentration and quality of hospitals that care for elderly black patients. *Archives of Internal Medicine* 167(11):1177–1182.

Jha, A. K., E. J. Orav, J. Zheng, and A. M. Epstein. 2008. The characteristics and performance of hospitals that care for elderly Hispanic Americans. *Health Affairs* 27(2):528–537.

Jha, A. K., E. J. Orav, and A. M. Epstein. 2011. Low-quality, high-cost hospitals, mainly in South, care for sharply higher shares of elderly black, Hispanic, and Medicaid patients. *Health Affairs* 30(10):1904–1911.

Joynt, K. E., and A. K. Jha. 2013. A path forward on Medicare readmissions. *New England Journal of Medicine* 368(13):1175–1177.

Joynt, K. E., and M. B. Rosenthal. 2012. Hospital value-based purchasing: Will Medicare's new policy exacerbate disparities? *Circulation: Cardiovascular Quality and Outcomes* 5(2):148–149.

Joynt, K. E., E. J. Orav, and A. K. Jha. 2011. Thirty-day readmission rates for Medicare beneficiaries by race and site of care. *Journal of the American Medical Association* 305(7):675–681.

Karve, A. M., F. S. Ou, B. L. Lytle, and E. D. Peterson. 2008. Potential unintended financial consequences of pay-for-performance on the quality of care for minority patients. *American Heart Journal* 155(3):571–576.

Krumholz, H. M., and S. M. Bernheim. 2014. Considering the role of socioeconomic status in hospital outcomes measures. *Annals of Internal Medicine* 161(11):833–834.

Ly, D. P., L. Lopez, T. Isaac, and A. K. Jha. 2010. How do black-serving hospitals perform on patient safety indicators?: Implications for national public reporting and pay-for-performance. *Medical Care* 48(12):1133–1137.

Medicare.gov. n.d. *The total performance score information*. https://www.medicare.gov/hospitalcompare/data/total-performance-scores.html (accessed February 5, 2016).

MedPAC (Medicare Payment Advisory Commission). 2013. Chapter 4: Refining the hospital readmissions reduction program. In *Report to the Congress: Medicare and the health care delivery system.* Washington, DC: MedPAC.

Mehta, R. H., L. Liang, A. M. Karve, A. F. Hernandez, J. S. Rumsfeld, G. C. Fonarow, and E. D. Peterson. 2008. Association of patient case-mix adjustment, hospital process performance rankings, and eligibility for financial incentives. *Journal of the American Medical Association* 300(16):1897–1903.

NASEM (National Academies of Sciences, Engineering, and Medicine). 2016. *Accounting for social risk factors in Medicare payment: Identifying social risk factors*. Washington, DC: The National Academies Press.

Popescu, I., R. M. Werner, M. S. Vaughan-Sarrazin, and P. Cram. 2009. Characteristics and outcomes of America's lowest-performing hospitals: An analysis of acute myocardial infarction hospital care in the United States. *Circulation: Cardiovascular Quality and Outcomes* 2(3):221–227.

Rajaram, R., J. W. Chung, C. V. Kinnier, C. Barnard, S. Mohanty, E. S. Pavey, M. C. McHugh, and K. Y. Bilimoria. 2015. Hospital characteristics associated with penalties in the Centers for Medicare & Medicaid Services hospital-acquired condition reduction program. *Journal of the American Medical Association* 314(4):375–383.

Ryan, A. M. 2013. Will value-based purchasing increase disparities in care? *New England Journal of Medicine* 369(26):2472–2474.

Sheingold, S. H., R. Zuckerman, and A. Shartzer. 2016. Understanding Medicare hospital readmission rates and differing penalties between safety-net and other hospitals. *Health Affairs* 35(1):124–131.

Shih, T., A. M. Ryan, A. A. Gonzalez, and J. B. Dimick. 2015. Medicare's hospital readmissions reduction program in surgery may disproportionately affect minority-serving hospitals. *Annals of Surgery* 261(6):1027–1031.

Sjoding, M. W., and C. R. Cooke. 2014. Readmission penalties for chronic obstructive pulmonary disease will further stress hospitals caring for vulnerable patient populations. *American Journal of Respiratory and Critical Care Medicine* 190(9):1072–1074.

Williams, K. A., Sr., A. A. Javed, M. S. Hamid, and A. M. Williams. 2014. Medicare readmission penalties in Detroit. *New England Journal of Medicine* 371(11):1077–1078.

Improving Care for Socially At-Risk Populations

**PERFORMANCE OF PROVIDERS DISPROPORTIONATELY SERVING SOCIALLY
AT-RISK POPULATIONS**

As described in the committee's first report (NASEM, 2016), socially at-risk populations include individuals with social risk factors for poor health outcomes such as low socioeconomic position, social isolation, residing in a disadvantaged neighborhood, identifying as a racial or an ethnic minority, having a non-normative gender or sexual orientation, and having limited health literacy (NASEM, 2016). Although these populations receive care from a wide range of providers, they are disproportionately represented among the patients treated by a small subset of providers, including safety-net hospitals, minority-serving institutions, critical access hospitals, and community health centers (CHCs) (Bach et al., 2004; Jha et al., 2007, 2008). Evidence suggests the performance of these providers may differ systematically from providers serving the general population.

Inpatient Care

Safety-net providers "organize a significant level of health care and other related services to uninsured, Medicaid, and other vulnerable patients" (IOM, 2000, p. 21). Safety-net hospitals defined as those with a high proportion of Medicaid or low-income patients on average provide lower-quality care (i.e., adherence to recommended care processes) for myocardial infarction, congestive heart failure, community-acquired pneumonia, and colon cancer (Culler et al., 2010; Goldman et al., 2007; Rhoads et al., 2013; Ross et al., 2007). Patients at safety-net hospitals also report poorer experiences of care compared to patients at non–safety-net hospitals (Chatterjee et al., 2012; Mouch et al., 2014). On the other hand, one study defined safety-net hospitals as members of the National Association of Public Hospitals and Health Systems (now America's Essential Hospitals), because members self-identify as safety-net providers and have many characteristics of safety-net hospitals, including serving a large proportion of uninsured and Medicaid patients and mostly having public or nonprofit ownership (Marshall et al., 2012). This study found no significant differences in the quality of care for acute myocardial infarction (AMI), pneumonia, and surgical care between safety-net and non–safety-net hospitals (Marshall et al., 2012). Two studies examined trends over time. One study examined disparities in quality of care (Werner et al., 2008), and the other examined disparities in patient experience (Chatterjee et al., 2012); both found that safety-net hospitals improved more slowly compared to non–safety-

net hospitals, resulting in a widening disparity in performance between safety-net and non–safety-net hospitals over time. Disparities in patient safety indicators, mortality rates, and readmission rates at safety-net hospitals compared to non–safety-net hospitals are more mixed (Mouch et al., 2014; Ross et al., 2007, 2012; Wakeam et al., 2014). Given the lack of agreement about the operational definition of a safety-net hospital, differences in measures used to define safety-net hospitals may account for some of the inconsistency in findings (Marshall et al., 2012; McHugh et al., 2009).

Minority-serving institutions are frequently defined in the literature as providers with a proportion of racial and ethnic minority patients in the top decile and are often restricted to blacks or Hispanics. Compared to hospitals with fewer black patients, black-serving hospitals (top decile proportion of black patients) as a group provide lower-quality care for pneumonia, AMI, and lower-extremity vascular procedures (Barnato et al., 2005; Jha et al., 2007; Mayr et al., 2010; Regenbogen et al., 2009). Black-serving hospitals also have poorer patient safety outcomes (Ly et al., 2010), higher readmission rates (Joynt and Jha, 2011; Tsai et al., 2015), and poorer health outcomes for patients with AMI (Barnato et al., 2005; Skinner et al., 2005). Patients at black-serving hospitals also reported poorer experiences of care (Brooks-Carthon et al., 2011). Studies of providers serving high proportions of Hispanics, Asians, and other racial and ethnic minority patients show similar patterns of disparity (Hasnain-Wynia et al., 2010; Jha et al., 2008; Rangrass et al., 2014). Notably, hospitals that disproportionately serve racial and ethnic minority patients perform worse on average regardless of an individual patient's race (Gaskin et al., 2008; Joynt and Jha, 2011; Lopez and Jha, 2013). In other words, both white and non-white patients at minority-serving institutions receive poorer quality care and have worse outcomes compared to white and black patients at non-minority-serving institutions (Gaskin et al., 2008; Joynt and Jha, 2011; Lopez and Jha, 2013). Evidence on the quality of care at nursing homes with a high proportion of black residents is inconsistent (Chisholm et al., 2013; Miller et al., 2006).

Critical access hospitals refer to rural safety-net providers—specifically, smaller, rural, acute care hospitals eligible for additional federal funding to provide care to patients who reside in rural areas and have difficulty accessing inpatient care (Joynt et al., 2011, 2013). Compared to both non–critical access hospitals generally and to urban acute care hospitals specifically, critical access hospitals provide lower-quality care on average and have higher mortality rates for AMI, heart failure, and pneumonia (Joynt and Jha, 2011; Joynt et al., 2013; Lutfiyya et al., 2007).

Together, the literature described above suggests that hospitals disproportionately serving socially at-risk populations may provide lower-quality care and have worse patient outcomes compared to hospitals serving the general population on average. However, there is also evidence of substantial variation in performance among these providers. For example, Gaskin and colleagues (2011) found that the performance of minority-serving hospitals varied substantially across measures and by race and ethnicity. Additionally, they found both positive and negative associations between the proportion of black discharges and indicators of mortality and patient safety. Other studies have shown that there is substantial overlap in performance between minority-serving hospitals and white-serving hospitals, and substantial numbers of minority-serving hospitals perform well, achieving performance scores on par with the top non–minority-serving hospitals (Jha et al., 2008). At the same time, several studies of low-performing hospitals for care processes for AMI, heart failure, and pneumonia (those performing in the bottom decile or quartile) reported that these hospitals are more likely to serve disproportionate

shares of socially at-risk populations—racial and ethnic minorities and low-income patients—and identify as safety-net hospitals (Girotra et al., 2012; Jha et al., 2011; Popescu et al., 2009).

Ambulatory Care

In contrast to inpatient facilities, literature suggests that the performance of safety-net and minority-serving providers of ambulatory care is more mixed. Safety-net primary care providers include community health centers and minority-serving providers. CHCs, also known as federally qualified health centers, and federally funded health centers provide primary care and preventive services to socially at-risk populations such as Medicaid patients, uninsured patients, migrants, and the homeless. These health centers are eligible for increased reimbursement rates for Medicare and Medicaid (HRSA, n.d.). Several studies reported that patients of CHCs and their look-alikes (providers with similar characteristics but who do not receive federal grant funding) receive equal or higher-quality care and have lower utilization rates (i.e., emergency department [ED] visits, inpatient hospitalizations, preventable hospitalizations, and hospital readmissions) on average compared to patients accessing other providers (Goldman et al., 2012; Laiteerapong et al., 2014; Rothkopf et al., 2011). In contrast, one study reported that patients of physicians who reported high Medicaid case volumes had higher rates of hospitalization for two ambulatory care–sensitive conditions—chronic obstructive pulmonary disease and pneumonia (O'Malley et al., 2007). As for minority-serving primary care providers, Lopez and colleagues (2015) found that Latino patients within a single large academic care network in Massachusetts who received care from primary care practices with a high proportion of Latino patients received higher-quality care for coronary artery disease and congestive heart failure compared to patients receiving care from practices with fewer Latino patients. Sequist and colleagues (2008) reported that the number of black patients treated by a physician was not associated with worse performance among diabetes patients. One study found that the quality of care did not differ between minority-serving and non–minority-serving dialysis facilities, but that patient survival was worse among minority-serving facilities (Hall et al., 2014). Literature from these ambulatory care facilities provides evidence of further variations in the quality of care among providers disproportionately serving socially at-risk populations.

Publicly Reported Performance Data

The committee considered using publicly reported performance data from providers relevant to Medicare beneficiaries—Medicare Hospital Compare hospital data and Medicare Advantage and Medicare Part D Star Ratings health plan data—to identify high-performing providers disproportionately serving socially at-risk populations. To do so would have engaged the committee in original empirical research, uncommon in reports from the National Academies of Sciences, Engineering, and Medicine, especially given the time frame the committee faces. The committee identified several challenges to identifying universally high performers. As described in the literature (e.g., Gaskin et al., 2011; Girotra et al., 2012; Jha et al., 2005, 2008; McHugh et al., 2014), there exists substantial variability in performance across measures and practice areas within organizations and across time for all providers. Individual providers perform well and poorly on different measures and in different practice areas (Medicare.gov, n.d.). For example, Girotra and colleagues (2012) found that among all hospitals that reported performance on AMI or on heart failure from 2006 to 2008, 49 and 105 hospitals, respectively, that reported performance data in the Centers for Medicare & Medicaid Services (CMS) Hospital

Compare were consistently high performing from 2006 to 2008, and 88 and 147, respectively, were consistently low performing; only 18 hospitals were consistently high performing, and only 19 hospitals were consistently low performing for both AMI and heart failure. Similarly, Jha and colleagues (2005) found little correlation across measures of AMI, congestive heart failure, and pneumonia, and McHugh and colleagues (2014) found little consistency in performance as measured by either achievement or improvement across three quality domains—ED clinical process measures, inpatient clinical process measures, and patient experience measures.

Moreover, there is little stability in performance over time, such that a high performer one year may perform poorly the next. It is precisely for this reason that researchers frequently aggregate data across several years to establish average performance. Additionally, as CMS notes in a caveat about using the data for patient decision making, a provider's performance on any individual measure or domain may not generalize to its overall performance (Medicare.gov, n.d.). Likewise, one study used a composite measure covering multiple domains (quality/process of care measures for AMI, heart failure, and pneumonia; 30-day readmission rates, in-hospital mortality; efficiency; patient satisfaction; and two survey-based assessments of patient care quality by chief quality officers and frontline physicians) to identify high-performing hospitals (Shwartz et al., 2011). However, because hospitals varied in their performance across measures and the measures were poorly correlated, hospitals that ranked highly on the composite measure were unlikely to be top performers (top quintile) in individual measures.

Given these challenges, the committee did not embark on original research and depended on the published literature described above. Therefore, the committee was unable to identify high- or low-performing providers if interpreted as universally high or low performers across all measures. As a result, the committee was also unable to identify high- or low-performing providers who disproportionately serve socially at-risk populations. Despite these challenges and as described above (e.g., Gaskin et al., 2011; Goldman et al., 2012; Greenberg et al., 2014; Jha et al., 2008; Laiteerapong et al., 2014; Lopez et al., 2015; Rothkopf et al., 2011; Sequist et al., 2008):

> The committee found that some providers disproportionately serving socially at-risk populations achieved performance that was higher than their peer organizations and on par with the highest performers among all providers.

PRACTICES TO IMPROVE CARE FOR SOCIALLY AT-RISK POPULATIONS

The mechanisms underlying disparities in health care outcomes are complex and include both specific practices that occur during the provider–patient encounter and systemic differences that occur between treatment settings (Hasnain-Wynia et al., 2007, 2010). Disparities in health care outcomes occurring within the treatment setting may arise from differences in the quality of care received, which in turn may result from miscommunication, cultural misunderstanding, discrimination, and bias (IOM, 2003). Disparities in health care outcomes may also be attributable to between-provider mechanisms, which include characteristics of providers as well as mechanisms that lie outside of the care setting. Characteristics of providers serving socially at-risk populations that may drive differences in quality and outcomes include having fewer financial resources (e.g., lower margins, historically lower reimbursement rates) and having fewer and lower-quality clinical/health care resources (e.g., fewer technological resources and lower information technology capacity, fewer and less qualified clinicians) (Appari et al., 2014;

Bach et al., 2004; Blustein et al., 2010; Frimpong et al., 2013; Groeneveld et al., 2005; Jha et al., 2007, 2008; Li et al., 2015). Mechanisms driving disparities in health care outcomes that lie outside of provider settings include barriers to access and financial constraints for disadvantaged persons and differences in case-mix, including patient clinical characteristics and social risk factors (Chien et al., 2007; Jha and Zaslavsky, 2014; Karve et al., 2008; NASEM, 2016). For example, patients who cannot afford co-payments for prescription drugs or office visits may be less likely to keep chronic conditions under control.

Additional systemic factors driving differences between providers that may also be associated with quality of care and in turn health care outcomes include patient preferences for culturally concordant clinicians and the context of a patient's place of residence such as racial segregation and neighborhood disadvantage (Bach et al., 2004; Dimick et al., 2013; Popescu et al., 2010; Sarrazin et al., 2009). For example, Dimick and colleagues (2013) found that black patients who lived in the most racially segregated areas were more likely than white patients to undergo surgery at low-quality hospitals even though black patients were also more likely on average than white patients to live nearer to higher-quality hospitals. While these different drivers of disparities in health care quality and outcomes can be understood theoretically as static processes, in actuality, they occur in a more dynamic process such that mechanisms at the individual level (e.g., in the patient–provider encounter), health system level (e.g., provider characteristics), and community level (e.g., social risk factors) occur simultaneously and also interact (Gehlert et al., 2008).

The complex, interacting nature of the drivers of variation in the quality of care and health care outcomes makes it difficult to draw clear conclusions about what precisely drives this variation among providers that disproportionately serve socially at-risk populations. Combined with the fact that, as described in the previous section, the committee was unable to identify high- or low-performing providers if interpreted as universally high or low performers across all outcomes, it follows that it is also problematic to then identify practices associated with the performance of universally high- and low-performing providers, let alone among those disproportionately serving socially at-risk populations, and to make comparisons between them. This is consistent with a study of top-performing hospitals in AMI mortality rates, which found that although all hospitals identified precise protocols and practices targeted at reducing mortality among patients with AMI, the authors identified no single shared practice or set of practices that was instrumental or essential to reducing AMI mortality (Curry et al., 2011). Nevertheless, recognizing that some providers have achieved high performance for certain conditions or in certain quality domains, the committee turned to case studies to identify specific practices used either to improve performance or achieve high performance for socially at-risk populations or to mitigate the effects of social risk factors on their patient population's health outcomes within specific facilities. The committee reviewed both the peer-reviewed and grey literature in order to identify innovations, interventions, and other strategies providers disproportionately serving socially at-risk populations have implemented to improve care and outcomes for their patients. As described in Chapter 1, the committee reached out to organizations known to conduct research or represent providers disproportionately serving socially at-risk populations (Alliance of Community Health Plans, America's Essential Hospitals, America's Health Insurance Plans, and The Commonwealth Fund) and asked for help identifying relevant case studies, especially those that are not within the peer-reviewed published literature.

The committee reviewed the 60 case studies submitted, as well as the published literature. The case studies and published literature include strategies implemented to improve care and outcomes for socially at-risk populations from a variety of providers, not only those providers disproportionately serving socially at-risk populations. The evidence identified through these searches has substantial limitations. The literature revealed few rigorous (controlled) evaluations, which precluded inferences about causal effects of specific strategies. Moreover, because the case studies describe interventions tailored to a local community context, they are unlikely to be generalizable to providers with different resources and located in different communities. In addition, although the case studies documented concerted efforts to improve care processes and patient outcomes, outcome data were limited and the relative performance of individual providers compared to their peers was not well documented. Given these limitations, the committee was not able to identify "best practices" if interpreted as uniform and universal strategies to provide high-quality care for socially at-risk populations and was not able to make comparisons between high- and low-performing providers, even among case studies. Furthermore, because community context is a central determinant of what is needed, acceptable, and feasible in different configurations of problems and resources, universal and uniform implementation of "best practices" to improve care for all patients within a population and in all settings may not be desirable. As described above, this is consistent with the quality improvement literature. For example a study of top-performing hospitals in AMI mortality rates reported that no single practice or set of practices was essential to achieving high performance (Curry et al., 2011), and leadership and frontline personnel from eight minority-serving institutions identified customizing their approach (compared to using commercially available guides or toolkits) as key to reducing readmissions (Joynt et al., 2014). Likewise, a study identifying best practices for implementing disparities reduction initiatives based on findings from a series of systematic reviews reported that successful interventions "must be individualized to specific contexts, patient populations, and organizational settings" (Chin et al., 2012, pp. 994–995). Nevertheless, as will be described in a subsequent section:

> The committee found examples of specific strategies implemented in specific community contexts by providers serving socially at-risk populations with the goal to improve health care quality and health outcomes.

IDENTIFYING SYSTEMS PRACTICES

Committee members identified commonalities from the review of the case studies, informed also by the literature and, in some cases, members' empirical research or professional experience delivering care to socially at-risk populations. The common themes describe a set of practices delivered within a system of collaborating partners, not to specific health care interventions, and are consonant with research findings from the quality improvement literature and related clinical interventions designed to decrease disparities. Note that "system" as used here is not limited to a single health care organization, but refers more generally to a set of interconnected actors who work together to accomplish a common purpose—in this case to improve health equity and outcomes for socially at-risk populations. In this approach, the system is mainly composed of medical providers as well as partnering social service agencies, public health agencies, community organizations, and the community in which those medical providers are embedded. The medical providers may be formally (i.e., through legal arrangements) or

informally related to the external partners, but all serve the same community or geographic region.

> *The committee concluded that six community-informed and patient-centered systems practices show promise for improving care for socially at-risk populations:*
>
> - *Commitment to health equity: Value and promote health equity and hold yourself accountable.*
> - *Data and measurement: Understand your population's health, risk factors, and patterns of care.*
> - *Comprehensive needs assessment: Identify, anticipate, and respond to clinical and social needs.*
> - *Collaborative partnerships: Collaborate within and across provider teams and service sectors to deliver care.*
> - *Care continuity: Plan care and care transitions to prepare for patients' changing clinical and social needs.*
> - *Engaging patients in their care: Design individualized care to promote the health of individuals in the community setting.*

In the next section, the committee describes the case studies, as well as supporting literature from the quality improvement and disparities-reduction literature, that support the systems practices. It is important to note that these practices together constitute a general approach to identifying and developing best practices for a specific community context and given specific resources. Unlike clinical best practices that are applied to all individuals in a given population and that are derived from systematic reviews of the evidence to identify causal associations, these systems practices are not interventions that can be applied wholesale in every practice setting for every patient and in every community context and be expected to improve quality and outcomes for socially at-risk populations. Rather, a health care system can use these systems practices to conduct routine self-assessments to identify areas to improve care for socially at-risk populations and develop improvement strategies tailored to the system's specific assets, barriers, needs, and capacities. These practices pertain to all health systems that serve socially at-risk populations.

As shown in Figure 2-1, the committee conceives of this system as grounded in community-informed and patient-centered care and emerging out of a commitment to health equity. This commitment supports and drives the other population-based practices, resulting in individualized care that promotes the health of the patient in his or her community context. Although in reality, a provider simultaneously engages in each system practice, each practice captures a thought process and set of decisions that logically influence the next. For example, a system may already conduct a comprehensive needs assessment, but this assessment will be fundamentally different when driven by a commitment to health equity and when it includes social needs in addition to clinical needs. The value and resources that flow from this commitment drive changes in other processes, such as collaborating with social service agencies in the community, which support enhanced planning for care transitions. Finally, the hard work of providing high-quality care is never done; this systems approach provides a continuous process for improvement.
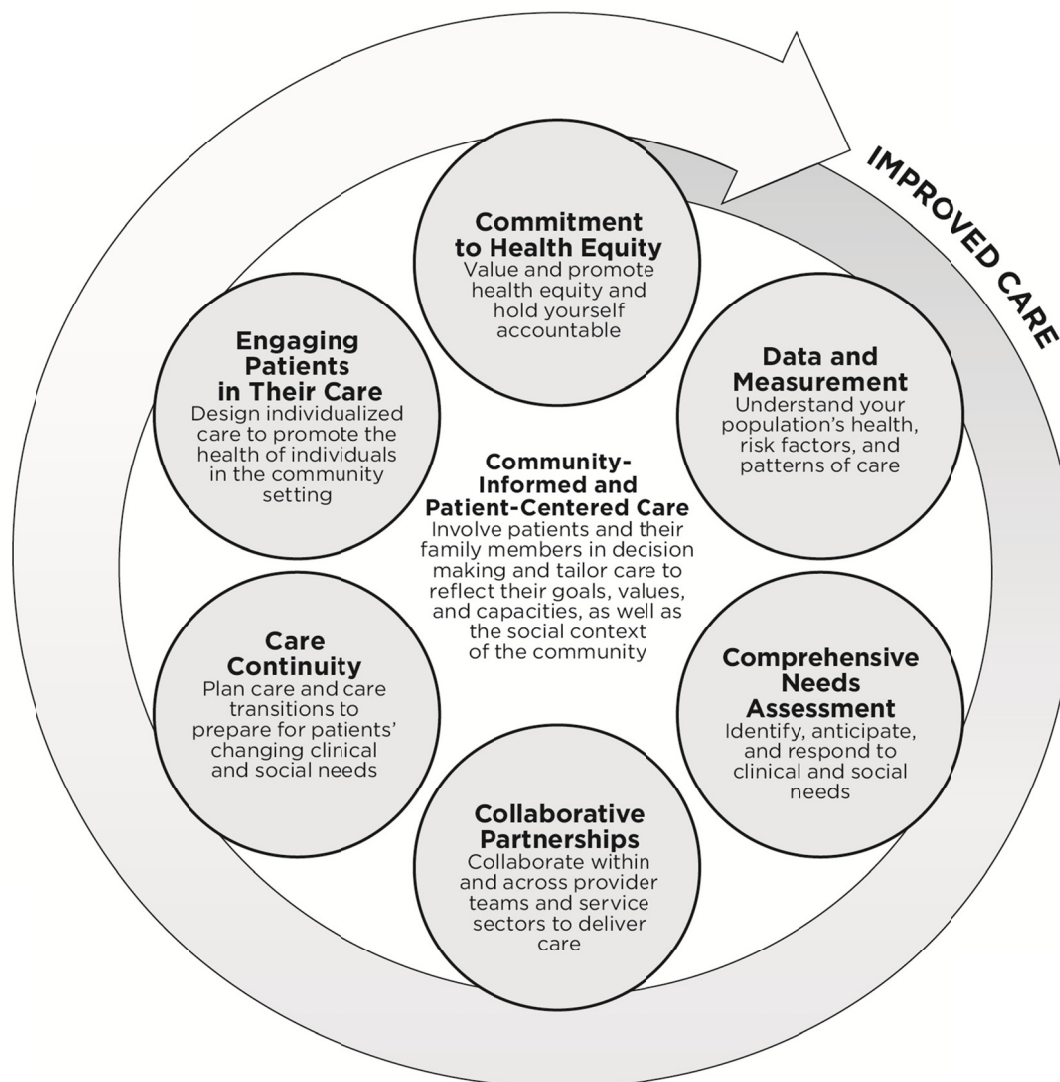
FIGURE 2-1 Promising systems practices to improve care for socially at-risk populations.

While these systems practices build on existing models of health care quality improvement, care coordination, care transitions, and patient-centered care, this aspirational and innovative model differs from existing models because it focuses on achieving health equity, incorporates how health systems may address social risk factors, and expands on patient-centered care models to include the broader communities in which patients and health systems are embedded. While other models of care include team-based care (e.g., patient-centered medical home, chronic care model, transitional care and care transitions models) (Coleman et al., 2006; Davis et al., 2005; Naylor et al., 2004; Wagner et al., 1996), these are typically limited to clinical teams, whereas this model also incorporates collaborative partnerships with external organizations, including not only other clinical care providers, but also community organizations and social service and public health agencies to address social risk factors. In sum, these practices make up an approach by which health care systems can promote equitable health outcomes by using data to reveal unmet needs, which are then addressed through collaborative partnerships that coordinate care across time, sites of care, and intensity of needed services to

support patients living in the community to engage in their health care in the context of patient goals and community resources.

Tables 2-1a through 2-1f provide summary descriptions of the six systems practices, example implementation strategies, and considerations for implementation. The individual systems practices are discussed in more detail along with case studies that illustrate how these systems practices have been implemented in specific community contexts in the following sections. The case studies highlighted were selected for the comprehensiveness of their descriptions. As such, they are not a representative sample of strategies used by providers and are inherently interventions tailored to meet the needs of specific populations in specific community contexts. Additionally, particular strategies and their affect on improving health care quality and health outcomes may not be replicable by different providers and in different settings. Furthermore, the case studies date back several years and the practices described may no longer be present in the organization. The intervention strategies provide examples of the types of strategies organizations have used to apply a given systems practice in their organizational setting for specific patient populations and given their specific community context. Appendix A provides examples of implementation strategies and examples of case studies in which these strategies were identified.

TABLE 2-1a Description of Systems Practices to Improve Care for Socially At-Risk Populations and Implementation Considerations: Commitment to Health Equity

Systems Practice	Description	Example Implementation Strategies	Implementation Considerations

Commitment to health equity: Value and promote health equity and hold yourself accountable	Health care leaders and staff at all levels express a core commitment to valuing and promoting health equity. Health care providers accept accountability for reducing inequities. Strategic decision making considers the impact on equity and has the goal of producing equity as an outcome of the organization's operations.	• Culture of equity:
		  o Senior management and clinician leadership commitment to equity[a]
		  o Integration of health equity into and communication of equity as part of common organizational vision, mission, and goals[b]
		• Integration health equity into strategic planning, including quality improvement processes[c]:
		  o Internal leaders designated responsibility for developing and overseeing a strategic plan to monitor and reduce health inequities[d]
		  o Diverse workforce to provide culturally concordant and culturally competent care[e]
		  o Workforce trainings and education to improve communication with patients, including cultural competence training and hiring language interpreters[f]
		  o Interventions to reduce inequities[g]
		• Accountability for equity:
		  o Identification and acknowledgment of health inequities and setting measurable goals to reduce them[h]
		  o Expectations set and feedback provided regarding activities and practices to achieve equity[i]
		  o Incorporation of health equity into compensation or incentives[j]
		• Financial and non-financial resources aligned and allocated to promote health equity[k]
			Achieving health equity is also interdependent with other goals to achieve a high-performing health system, including redesigning care delivery and aligning financial incentives. Embedding equity as a value in a health system requires leadership and a change in organizational culture. Leadership sets expectations for staff at all levels regarding activities related to equity and provides feedback on achievement. Valuing equity is a practice that permeates each of the other systems practices.

SOURCES:
[a] Chin et al., 2012; Jones et al., 2010; Taylor et al., 2015.
[b] Chin et al., 2012; IOM, 2001; Taylor et al., 2015.
[c] Chin et al., 2012.
[d] VanDeusen-Lukas et al., 2015.

[e] IOM, 2001.
[f] Chin et al., 2012; IOM, 2001; Weech-Maldonado et al., 2012.
[g] Chin et al., 2012.
[h] Ayanian and Williams, 2007; Chin et al., 2012; Jones et al., 2010.
[i] Chien et al., 2007; Davis et al., 2015; Peek et al., 2007; Taylor et al., 2015.
[j] Personal communication, Susan Knudson (HealthPartners) to Chuck Baumgart (committee member), December 14, 2015.
[k] Chin, 2016; Chin et al., 2012; Curry et al., 2011; Davis et al., 2015; IOM, 2003; Jones et al., 2010; Taylor et al., 2015.

TABLE 2-1b Description of Systems Practices to Improve Care for Socially At-Risk Populations and Implementation Considerations: Data and Measurement

Systems Practice	Description	Example Implementation Strategies	Implementation Considerations
Data and measurement: Understand your population's health, risk factors, and patterns of care	Health care providers understand their patterns of performance across different indicators of social risk. Providers know how their performance for socially at-risk populations compares with top-performing peers.	• Regular, standardized collection of social risk factor data[a] • Analysis and monitoring of performance data disaggregated by indicators of social risk to identify existing health disparities within organizations[b] o Enhanced risk prediction models[c] • Comparison of performance to top performers and peers	The concentration of socially at-risk patients among a small subset of health care providers means that many providers will be unable to reliably assess disparities with internal data alone. Providers may need to benchmark their performance against peer organizations or population-based measures.

SOURCES:
[a] Ayanian and Williams, 2007; Chin et al., 2012; HHS, 2011a; IOM, 2003, 2009; Thorlby et al., 2011.
[b] Ayanian and Williams, 2007; Chin et al., 2012; HHS, 2011a; Sequist et al., 2008; Thorlby et al., 2011.
[c] For example, Hostetter and Klein, 2015; Johnson et al., 2015.

TABLE 2-1c Description of Systems Practices to Improve Care for Socially At-Risk Populations and Implementation Considerations: Comprehensive Needs Assessment

Systems Practice	Description	Example Implementation Strategies	Implementation Considerations

Comprehensive needs assessment: Identify, anticipate, and respond to clinical and social needs	Providers analyze performance data, as well as directly engage patients, to identify unmet clinical or social needs. Providers also review the literature and the experiences of peers to identify lessons and anticipate their patient population's needs. Based on these activities, providers design programs and practices that anticipate and respond to those needs.	• Proactive identification of patient assets and unmet social needs:
		  o Proactive health assessment tool completed by patients[a]
		  o Analysis of data from a variety of sources (including performance data, utilization data, clinical notes, patient observations, and patient-generated data)
		• Data sharing with other providers, public health and social service agencies, and community organizations to identify patients' social needs[b]
		  o Information exchange portal for clinical providers, social service agencies, public health agencies, and community organizations to share information (with patient permission) about social needs[c]
		• Review the literature and experiences of peers to anticipate patients' potential needs and assets
			Different causal mechanisms may predominate in different contexts. It may be difficult to replicate others' program results when important contextual features differ.

SOURCES:
[a] For example, ACHP, n.d.-c.
[b] Personal communication, Doug McCarthy (The Commonwealth Fund) to staff, January 12, 2016.
[c] Hostetter and Klein, 2015.

TABLE 2-1d Description of Systems Practices to Improve Care for Socially At-Risk Populations and Implementation Considerations: Collaborative Partnerships

Systems Practice	Description	Example Implementation Strategies	Implementation Considerations
Collaborative partnerships: Collaborate within and across provider teams and external partners to deliver integrated, coordinated care	Providers create collaborative teams to deliver services with scope, intensity, and scale matched to population needs. Collaborations will often need to span multiple service sectors, such as housing, transportation, and nutrition. Collaborations must be sufficiently integrated to share information and critical insights about patients.	• Integrated, coordinated, team-based care design: o Medical neighborhoods/accountable health communities[a] o Care teams, including non-medical professionals[b] • Increased access to care: o Open-access/same-day appointments for ambulatory care[c] o New technologies (e.g., teleconference, videoconference, and mobile screening units) that bring clinical care to patients • Regional collaborations with other health care providers[d] • Involvement and collaboration with social service and public health agencies and community organizations[e]	Key questions to identify care partners include Who has the resources and skills to help? What informal relationships can be used as building blocks to create collaborations? What are community partners already doing successfully that can be built on? Collaborations may evolve over time as needs and obstacles become clearer. In addition, effective models of collaboration will differ based on the specific patient needs and community context.

SOURCES:
[a] Alley et al., 2016; Corrigan and Fisher, 2014; Fisher, 2008; Greenberg et al., 2014; Huang and Rosenthal, 2014.
[b] Chin et al., 2007, 2012; Davis et al., 2015; IOM, 2003, 2015d.
[c] Felland et al., 2013; IOM, 2003, 2015d.
[d] Cebul et al., 2015; McCarthy et al., 2014; Press et al., 2012.
[e] Davis et al., 2015; Peek et al., 2007; Sandberg et al., 2014; Schor et al., 2011.

TABLE 2-1e Description of Systems Practices to Improve Care for Socially At-Risk Populations and Implementation Considerations: Care Continuity

Systems Practice	Description	Example Implementation Strategies	Implementation Considerations
Care continuity: Plan care and care transitions to prepare for patients' changing clinical and social needs	Health care providers anticipate and carefully plan patient trajectories through illness progression, across sites of clinical care, between clinical care teams, between health care providers and social service agencies and community organizations, and differing intensity of needed services. Providers design transitions and hand-offs to maintain patient engagement and avoid losses to follow up.	• Coordinated care teams[a] • Case management by trained clinical or lay person care coordinators/patient navigators[b] • New technologies (e.g., teleconference, videoconference, shared data) to coordinate care between clinical and social service providers[c] • Collocating clinical, behavioral health, and social services[d] • Patient education about care transitions[e]	Programs must be prepared for cycles of patient progress and relapse. After successful intervention, providers may need to monitor patients to ensure that progress is maintained, as well as to detect relapse and re-intensify services as needed.

SOURCES:
[a] Chin et al., 2012; Davis et al., 2015.
[b] Chin et al., 2007, 2012; Davis et al., 2015; Masi et al., 2007; Naylor et al., 2011; Peek et al., 2007; Van Voorhees et al., 2007.
[c] Hostetter and Klein, 2015; IOM, 2015d; Naylor et al., 2011.
[d] For example, Buchanan et al., 2009; Larimer et al., 2009; Martinez and Burt, 2006; Pirraglia et al., 2011.
[e] Davis et al., 2015; Naylor et al., 2011.

TABLE 2-1f Description of Systems Practices to Improve Care for Socially At-Risk Populations and Implementation Considerations: Engaging Patients in Their Care

Systems Practice	Description	Example Implementation Strategies	Implementation Considerations
Engaging patients in their care: Design individualized care to promote the health of individuals in the community setting	Providers design care to promote functioning in the patient's home and neighborhood or other chosen environment. For different patients, the same function (e.g., self-management support) could be realized through different forms (e.g., nurse care manager or community health worker) depending on the level of severity and desired site of care (office visits versus phone consultation versus home visits).	• Patient education about self-management, healthy behaviors, and care coordination[a] • Culturally sensitive, targeted, and tailored patient education[b] • Tailored care plans easily understood by patients • Clinician and non-clinician patient/health navigation[c] • New technologies (telephone consultation, videoconference, mobile screenings, smartphone apps, etc.) to promote healthy behaviors and reduce health risks[d] • Reach patients through community centers, homeless shelters, religious organizations, schools	Different solutions may be required in different contexts, because causal mechanisms differ or interact in varying ways. For instance, readmissions may be due to inadequate instrumental support (e.g., transportation), undiagnosed behavioral illness, or both.

SOURCES:
[a] Itzkowitz et al., 2016; Naylor et al., 2012; Press et al., 2012; Sajid et al., 2012.
[b] Chin et al., 2012; Hemmige et al., 2012; Masi et al., 2007; Peek et al., 2007; Van Voorhees et al., 2007.
[c] Chin et al., 2012; Naylor et al., 2012.
[d] Glick et al., 2012.

EVIDENCE BASE FOR THE SIX SYSTEMS PRACTICES

Providing community-informed and patient-centered care is a core principle underlying each of the six systems practices described in the following sections. Patient-centered care is a component of high-quality care, but it may be particularly salient to patients with social risk factors who may be at increased risk of receiving lower-quality care and having poorer care experiences (Crawford et al., 2002; IOM, 2001; NASEM, 2016). Patient-centered care reflects the patient's goals and values (IOM, 2001, 2013a). This means that patients are involved in making decisions about their care and practitioners understand what is practical for the patient to do given the individual patient's degree of agency and opportunity in daily life (Ferrer et al., 2014, 2016; Joynt et al., 2014). Additionally, providers reduce barriers to accessing care and coordinate care across care settings (and with external partners) (IOM, 2001, 2013a). Although patient-centered care shows promise to improve outcomes, especially with respect to patient experiences and self-management, there remains little evidence on effects on clinical outcomes, use, and costs—in part because it may take time for these benefits to accrue (Crawford et al., 2002; IOM, 2013a; Jackson et al., 2013; Jaen et al., 2010; Rathert et al., 2013).

Community-informed care expands on the principle of patient-centered care to also understand and account for the community context in which a care setting and a patient are embedded. As described in the committee's first report (NASEM, 2016), *community context* refers to a set of broadly defined characteristics of residential environments, including physical and social environments, policies, infrastructural resources, and opportunity structures that may be relevant to health and health care outcomes. Because communities can be defined along multiple axes (e.g., geographically defined communities, racial or ethnic communities, and other social groups), health systems may serve multiple, potentially overlapping communities. Communities will vary in the ways they frame issues, the language used to discuss them, and cultural meanings attached to interventions (Hawe et al., 2009). Practicing community-informed care means that health care providers design care with an understanding of the local community's orientation to different needs and proposed interventions. Providers also design care with a deep understanding of the community environment, including assets, obstacles, key partners, and cultural considerations. The committee chose the term *community-informed* to connote care that takes account of assets, conditions, and needs in the community where the patient resides, and is agnostic about whether care is "based" in the community.

Practicing community-informed care will require not only recognition of what community needs exist, but also that communities will have different types of needs, which can be met in different ways. In applying each of the systems practices, health care organizations may provide clinical interventions tailored to populations based on social context. Additionally, health care organizations may partner or establish coalitions with social service and public health agencies and community organizations. This may be particularly relevant for organizations with more limited resources. Health care organizations may also intervene directly on social issues— for example, providing supportive housing or opportunities for socialization. Finally, health care organizations may identify social risk factors that the medical or clinical health system cannot address or should not address. For certain social risk factors, presuming that primary solutions lie within the health care sector risks "medicalizing" the factors in undesirable ways if the health care sector acts on them, because they may be better addressed through social policies or interventions rather than through individual medical interventions (Lantz et al., 2007; Woolf and

Braveman, 2011). For example, although patients may have health or social issues related to low educational attainment, these problems may be better addressed through interventions in the education sector than through health care interventions. Identifying how and why a community can or should be engaged will likely be essential to effective community engagement (HHS, 2011b).

Community involvement occurs along a continuum that ranges from simple outreach to a strong, bidirectional relationship with shared leadership (HHS, 2011b). Specific ways in which health care providers can better understand the community they serve and address a community's needs include soliciting information, guidance, and feedback on program designs, identifying and partnering with community resources, having a significant organizational presence, and investing in the community (e.g., HHS, 2011b; Meyers, 2008). Community-informed health care providers may simply seek input or feedback from community stakeholders about program design. Community-informed health care providers may also seek to know of and align their programs with existing community efforts, such as maintaining a repository of available community-based resources with which the health care provider can partner or to which a provider can refer patients for services (e.g., Joynt et al., 2014; Klein and McCarthy, 2010). Health care providers can also work with existing community assets to collaboratively reach out to socially at-risk populations. Hospitals can provide community-level population health data to facilitate collaborations with the community. Having a significant presence in the community can include having visible, community-based office locations and having staff who reside in and are hired from the community. Investing in the community could include expressing an organizational commitment to support unmet community needs, such as engaging in community service activities in the community or providing charitable care, as well as directly investing in the community, such as hiring staff from the community, providing health-promoting resources such as establishing farmers' markets in the community, and identifying funding strategies to address population health across health care and social services (Halfon et al., 2014; Meyers, 2008). These varying levels and ways of involving communities are discussed in more detail throughout the next sections on the six systems practices.

Kaiser Permanente is a large, nonprofit integrated managed care organization that provides a case study of a community-informed health system. Kaiser's comprehensive, multifaceted approach to improving community-level health uses ethnography and interviewing to understand drivers of health disparities; reduces barriers to receiving coordinated, culturally, and linguistically appropriate clinical care; promotes healthy behaviors in the community through targeted dissemination and interventions (e.g., farmers' markets, partnering with community activists to promote healthy eating and physical activity); and invests in environments supportive of health (Kaiser Permanente, n.d.; Meyers, 2008; Tyson, 2015). Health Share of Oregon's Community Advisory Council provides an example of a more structured approach to providing community-informed care, and is described in Box 2-1.

BOX 2-1
Community-Informed Patient-Centered Care Case Study: Health Share of Oregon's Community Advisory Council

Health Share of Oregon, established in 2012, is a nonprofit, state-designated coordinated care organization (CCO) that provides coordinated medical, dental, and behavioral care for Medicaid beneficiaries in a tri-county area surrounding Portland, Oregon. Oregon policy makers require state-designated CCOs to establish a Community Advisory Council (CAC) comprising of community and government representatives, a majority of whom must be consumers. At Health Share, the CAC members are strategically recruited to reflect the diversity of the community across multiple axes of diversity, including race and ethnicity, age, gender, sexual orientation, and geographic location. Among other duties, the CACs are tasked with conducting a community health assessment to identify community needs and developing a community health improvement plan to address health disparities. At Health Share, the CAC also provides feedback and advice about ways to link Health Share's medical services to social and behavioral services available in the community, as well as identifies strategies to engage community members in CCO strategic planning to achieve Health Share's vision, mission, and goals. The Health Share of Oregon CAC is also specifically tasked with advising organizational governance regarding Health Share's strategic plan, quality improvement plan, innovative interventions and care redesign, and opportunities to improve population health at the community level (DeMars, 2014; Health Share of Oregon, n.d.; Klein et al., 2014).

Commitment to Health Equity

As described in Chapter 1, health equity means that every person has the opportunity to attain his or her full health potential and no one is disadvantaged from achieving this potential because of social position or other socially determined circumstances. Conversely, health inequities refer to unfair differences or inequalities in health, and focus on systematic, often social processes that drive these inequalities, such as the distribution of resources (CDC, 2015). The Institute of Medicine (IOM) previously identified equity as fundamental to high-quality health care (IOM, 2001). The IOM also identified health care organizations together with individual clinicians, patients, and their legal and regulatory contexts as being responsible for eliminating health care disparities (IOM, 2003). However, achieving health equity requires more than providing equitable health care, or the same type of care to all patients regardless of social risk, because this may not be sufficient to reduce health inequities. Indeed, some subpopulations may need more intensive care to achieve the same health outcomes.

Providing high-quality health care for socially at-risk populations may require organizations to embed health equity as a value through organizational commitment and leadership. Embedding health equity as a value of an organization's culture will likely require commitment from staff in all areas and at all levels of an organization, especially senior leadership. For example, studies of interventions to reduce racial and ethnic disparities identified top-down commitment from leadership to reducing disparities in health care as essential to effective interventions (Chin et al., 2012; Jones et al., 2010). Similarly, studies of top-performing hospitals, including a systematic review, identified leadership commitment to and involvement in quality improvement as key to achieving high performance (Curry et al., 2011; Taylor et al., 2015). Another study of organizational changes to improve the quality of care in safety-net

systems identified organization-wide commitment and support for practice redesigns, including support from leadership, as important to effective practice transformation (VanDeusen-Lukas et al., 2015).

To demonstrate their commitment to equity, organizational leaders, including executives and governance, may need to identify reducing health inequities as an organizational priority, such as by incorporating equity as a value into the organization's vision, mission, and goals. For example, one study identified incorporating practice redesigns into an organization's vision, mission, and values as an organizational change important for improving the quality of care in safety-net settings (VanDeusen-Lukas et al., 2015). Organizational leaders can also show their commitment to equity by allocating financial and non-financial resources (including workforce and technology investments discussed below) to achieve equity goals. Studies of high-performing hospitals, including a systematic review, found that providing financial and non-financial resources were critical to improving quality (Curry et al., 2011; Taylor et al., 2015). Literature also suggests that achieving health equity is a goal interdependent with other goals to provide high-performing health care, such as redesigning care delivery to provide high-quality care, improving health outcomes and patient experience, and reducing health care costs (American Medical Group Association, 2011; Berwick et al., 2008; Chin et al., 2012; IOM, 2001, 2010). Organizational leaders can further support equity goals by supporting practices targeted at reducing health disparities, incorporating the goal of promoting equity into organizational policies and processes (including quality improvement processes), and by holding staff accountable (Curry et al., 2011; Taylor et al., 2015). Specific activities into which leaders can incorporate the aim of achieving health equity to support organizational transformation to achieve a culture of equity may include

- Investing in a diverse workforce to provide culturally concordant and culturally competent care and improved communication;
- Designing interventions to reduce health disparities
- Redesigning care to incorporate equity goals; and
- Setting measurable goals to reduce health disparities and holding staff accountable

Workforce Investments to Promote Health Equity

Initiatives targeted at enhancing workforce capacity to reduce health inequities include investments in additional staff such as hiring language interpreters or clinical and non-clinical staff from diverse backgrounds as well as staff development activities such as providing education, trainings, and other resources for staff (IOM, 2003). Evidence from the quality improvement literature shows that building and maintaining highly qualified staff, recruiting staff who are committed to the organizational vision, and developing talent through mandatory and specialized trainings (such as on evidence-based practice) is important to achieving high performance in hospitals (Taylor et al., 2015). Trainings regarding health equity may address cultural competence to improve communication between patients and providers, social determinants of health to increase awareness of social risk factors and capacity to identify potential unmet social needs, best practices for engaging with language interpreters, and social justice issues such as unconscious bias (American Medical Group Association, 2011). Although evidence is limited (Anderson et al., 2003; Meghani et al., 2009), some evidence suggests that racial concordance between physicians and patients may be associated with better quality of care

and increased patient trust, satisfaction, and intent to adhere (Cooper and Powe, 2004; Street et al., 2008). Similarly, a systematic review found that studies of cultural competency training for health professionals reported no effect to moderately beneficial effects on patient outcomes and no negative effects (Lie et al., 2011). Another more recent study found that hospitals with greater cultural competency (covering commitment from leadership, integration of cultural competency into management and operations, workforce diversity and training, community engagement, patient–provider communication, and care delivery supportive of culturally competent practice) were associated with better patient experiences of care overall and better scores for nurse communication, staff responsiveness, quiet room, and pain control among racial and ethnic minorities (Weech-Maldonado et al., 2012).

Designing Interventions to Reduce Health Inequity

To achieve health equity, health care organizations may need to proactively design interventions to reduce disparities, such as by improving care for certain targeted subpopulations. As described above, providing the same type of care to all patients may not reduce disparities. For example, socially at-risk populations may require more intensive care. A study identifying themes from systematic reviews of interventions to reduce racial and ethnic disparities found that successful interventions involved the active design of interventions to reduce disparities that were targeted to specific contexts, patient populations, and organizational settings (Chin et al., 2012). This may include designating internal leaders across the organization who are responsible for developing and overseeing a strategic plan to monitor and reduce health disparities. For example, a study of characteristics common to successful practice transformation to improve quality in safety-net systems noted that physician leaders and operational leaders must be engaged to spearhead practice transformations (VanDeusen-Lukas et al., 2015). Similarly, identifying a quality improvement "champion" and creating a quality improvement team comprising staff from all levels was common to successful interventions to reduce racial and ethnic health disparities (Chin et al., 2012). Based on these systematic reviews, the study also identified appointing staff to disparities-reduction initiatives as a best practice for implementing interventions to reduce disparities (Chin et al., 2012).

Redesigning Care to Promote Health Equity

An organization that is committed to achieving equity may need to not only design interventions to reduce health inequities, but also incorporate equity goals into its general organizational practices and procedures. As described above and in the experience of HealthPartners of Minnesota (American Medical Group Association, 2011; see also Box 2-2), incorporating the aim of equitable care in resource allocation, overall strategic planning and individual practices, and accountability processes such as performance reporting are essential to transforming an organizational culture to one that promotes health equity and reduces health disparities (Berwick et al., 2008; Chin et al., 2012; IOM, 2001, 2010). An organization's strategic plan provides a way to translate the aim of achieving equity in all organizational practices into an actionable strategy in which each practice incorporates the aim of achieving equity (American Medical Group Association, 2011; VanDeusen-Lukas et al., 2015). A study synthesizing lessons from successful interventions to reduce racial and ethnic disparities based on a series of systematic reviews noted that effective interventions must be integrated with overall quality improvement efforts, rather than be a separate, discrete initiative (Chin et al.,

2012). Thus, valuing equity is a practice that will permeate each of the other systems practices to improve care for socially at-risk populations.

BOX 2-2
Commitment to Health Equity Case Study: Integrating the Equitable Care Aim at HealthPartners

HealthPartners is the largest consumer-governed, nonprofit health care organization in the country, providing medical and dental services and health care coverage to more than 1.5 million individuals in Michigan, Minnesota, North Dakota, and South Dakota. Since 2001, HealthPartners has engaged in a comprehensive initiative to integrate achieving equitable care into its strategic vision. HealthPartners has a history as a safety-net provider. Furthermore, in addition to demographic changes similar to those seen across the United States nationally, beginning in the 1980s, the organization began to see increasing numbers of immigrants, especially South Asian and East African refugee populations. In response, the organization's executive leadership and governance recognized changes to its patient population, acknowledged and accepted accountability for existing health disparities, and acknowledged that providing equitable care was a strategic issue and part of its organizational vision. In addition, the organization believed that there were business, legal, and quality improvement rationales to provide equitable care. Together, grounded in the principle that changing inequalities is intertwined with achieving other aims of a high-performance health system, including providing safe, timely, effective, efficient, and patient-centered care (IOM, 2001), the organization committed to integrating the aim of equitable care into its larger practice transformation to improve the health of the population it serves.

To achieve this organizational goal, in 2001, HealthPartners executive management established a Health Disparities and Cultural Competence Task Force to lead and oversee the strategy to integrate the aim of achieving equitable care. In 2003, the Task Force commissioned an organizational assessment to establish the organization's baseline performance with respect to health disparities and culturally competent care, identify priorities, and set goals. Goals identified include measuring disparities in patient experience, preventive services, and diabetes care by race and "financial class" (American Medical Group Association, 2011) by 2006; measuring disparities in vascular disease care, pregnancy, and asthma by race and "financial class" by 2008; and reducing identified disparities by 75 percent by 2010. To achieve measurement goals, beginning in 2004, HealthPartners implemented standard processes for collecting race, ethnicity, and country of origin data at the point of care and language preference and need for interpreter services during appointment scheduling. As HealthPartners collected this data, the organization also incorporated results by race, ethnicity, and payer in its reporting processes to increase awareness of disparities across the organization.

To reduce disparities, HealthPartners established an Equitable Care Sponsor Group that comprises senior management representing all areas of the organization and is responsible for community and patient engagement and overseeing specific project teams. Community outreach activities to targeted cultural groups and the broader community include leadership symposiums and community forums to build trust, identify unmet needs, and receive input on ways to improve communication and health care delivery. Project teams include an Interpreter Services Workgroup, which established and promotes best practices for working with an interpreter and educates staff about ways to improve communication with patients through an interpreter, and the Disparities Oversight Team, which identifies opportunities, develops and oversees annual strategies to reduce disparities, and partners with organizational leaders to develop and implement

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interventions.

HealthPartners implemented several specific strategies to reduce disparities, including changes to clinical practice and broadening and supporting the workforce to create a diverse and inclusive environment. Changes to clinical practice include ensuring clinical best practices are applied to all patients, as well as practice redesigns such as outreach phone calls and same-day mammography to reduce barriers to mammography screening among non-white and low-income patients and enrollees. Workforce development activities include both hiring more diverse staff (including those with more language skills), as well as providing trainings, educational opportunities, resources, and other tools to increase awareness of health disparities and solutions. These tools include language trainings accompanying the expansion of interpreter staff, educational forums about social risk factors for poor health, and cultural competence training. In addition, HealthPartners developed the HealthPartners Equitable Care and Service intranet site, which provides access to resources and information to provide language-concordant health information (including translated materials) and arrange for interpreters, as well as information about training programs and population health data.

HealthPartners accepts accountability for health disparities in several ways. To evaluate the impact of these comprehensive efforts, HealthPartners compiles a Disparities Scorecard, which details clinical quality and patient experience data by subpopulation, as well as disparities trends. Similar population data are also available at a more local level for clinic managers and directors in their quality and services reports. In 2010, HealthPartners implemented 90-Day Plans to further increase awareness and accountability among frontline staff. Clinic leaders are required to maintain a written document that details clinic-specific goals, baseline and follow-up performance for specific measures, and specific activities to achieve goals. HealthPartners also includes disparities-reduction goals in payment incentives and other compensation for management and physicians. Since beginning this initiative to integrate the aim of achieving equitable care into its overall mission, HealthPartners identified numerous health disparities. Although it did not reach its goal of reducing identified disparities by 75 percent by 2010, from 2007 to 2010, HealthPartners reduced disparities in mammography screening rates by race and ethnicity by nearly half and payer (publicly compared to privately insured women) by nearly one-fifth. HealthPartners has seen similar reductions in racial disparities in the quality of care for heart failure, colorectal cancer screening rates, and diabetes outcomes through the end of 2014* (American Medical Group Association, 2011; McCarthy et al., 2009).

* Personal communication, Susan Knudson (HealthPartners) to Charles Baumgart (committee member), December 14, 2015.

Specific practices to support equity goals include investments in health information technology (HIT) and redesigning care to promote equity. Technology should facilitate identifying socially at-risk patients and populations, as well as their clinical and social needs and assets. HIT investments should also facilitate the provision of data in ways that are easily understood by all levels of staff, including community-level population health data for senior managers and clinic-level data for frontline staff. Here, the population in "population health" refers to all people residing in the provider's catchment area, or the geographic community it serves, and is not restricted to an enrollee or patient population. These activities are discussed in

more detail in subsequent sections on data and measurement and comprehensive needs assessment. Care should be redesigned to provide integrated, accessible, coordinated, team-based care that links clinical and social interventions to reduce barriers to care and to support the health of patients in the community setting. Although these are acknowledged as good practice for the general population (IOM, 2001, 2013a), they may be especially relevant for socially at-risk populations that have more unhealthy behaviors, more numerous and more complex health needs, more difficulty managing their health and social needs, and more limited health literacy; experience greater barriers to accessing care; may be at increased risk of receiving lower-quality care and having poorer care experiences; and who potentially receive care from multiple providers across a broad range of services (Bachrach et al., 2014; Crawford et al., 2002; Davis et al., 2015; IOM, 2001, 2013a; NASEM, 2016; Schor et al., 2011). Organizations that value equity should pay particular attention to ensure that the design of their care facilitates providing equitable care and promotes equitable health care outcomes.

Because a commitment to health equity acknowledges that social processes drive inequalities in health, to reduce health inequities and improve care for socially at-risk populations, organizations may be motivated to acknowledge the social context of their patient populations and even address social risk factors for poor health outcomes (Bachrach et al., 2014). This may be particularly true in the context of value-based purchasing models that provide economic incentives to do so (Bachrach et al., 2014). To consider and address social risk factors for poor health care outcomes, organizations may need to go beyond providing equitable care within the walls of their health systems to understand, partner with, and in some cases invest in the community in which they are embedded to support health outcomes of the communities they serve (Bachrach et al., 2014; Chin et al., 2012; Schor et al., 2011). Specific practices to redesign care for socially at-risk populations are discussed in more detail in subsequent sections on collaborative partnerships, care continuity, and engaging patients in their care.

Accountability for Health Equity

Effectively reducing health inequities will likely require an organization to accept accountability for its population health outcomes. Because population health is defined at the community level and is not restricted to an enrolled or patient population, organizations are accountable for community-level population health outcomes, not just the outcomes of their patient population. Accountability consists of both internal accountability within the health system and external accountability, such as accountability to third-party payers like Medicare. Accountability within the health system means that everyone within an organization from executive leadership down to frontline staff is accountable for population health outcomes. This requires organizations to acknowledge health disparities between subpopulations, set measurable goals to reduce disparities identified, and ensure these goals are achieved equitably (Ayanian and Williams, 2007).

Organizational leaders can set equity goals by communicating equity as part of their organizational vision, mission, and goals to staff at all levels through orientations and trainings and setting expectations regarding activities and practices staff should perform to reduce disparities. For example, a study identifying best practices for implementing interventions to reduce racial and ethnic disparities based on common themes identified through systematic reviews of such interventions suggests that organizations can make staff understand their role in reducing disparities by incorporating disparities-reduction training into staff orientations and including responsibilities with respect to disparities reduction into job descriptions (Chin et al.,

2012). Organizational leaders can then ensure that equity goals are met through performance monitoring and reporting and hold staff accountable by evaluating and providing feedback to staff on their achievement on activities related to equity. Studies of interventions to reduce racial and ethnic health disparities found that simply having and providing data on disparities increased awareness about disparities but was not associated with improved outcomes (Sequist et al., 2010; Thorlby et al., 2011). However, a systematic review of interventions to reduce racial and ethnic disparities in diabetes found that providing in-person feedback to providers about their performance improved diabetes outcomes for African-American patients (Peek et al., 2007). Similarly, one study found that providing feedback to providers improved care for high-cost Medicare beneficiaries (Davis et al., 2015) and a systematic review of high-performing hospitals identified feedback to address low performance as well as rewarding and recognizing high performance as important to achieving high performance overall (Taylor et al., 2015). In some cases, it may also be appropriate to incorporate disparities-reduction goals into payment incentives and other compensation for management and physicians.[1] External accountability can further support the alignment of interdependent goals to also incentivize health equity improvements (Jones et al., 2010).

HealthPartners of Minnesota and Kaiser Permanente provide two case studies of embedding equity as a value in a health system. HealthPartners is a Minnesota-based integrated health care organization that integrated the aim of equitable care into a larger practice transformation and successfully reduced disparities in cancer screenings, heart failure care, and diabetes outcomes[2] (American Medical Group Association, 2011). This initiative is described in Box 2-2. Kaiser Permanente (also described in the previous section) made an organizational commitment to reducing health disparities beyond providing equitable health care (Meyers, 2008; Tyson, 2015). Specific initiatives Kaiser Permanente implemented include investing in local communities, Kaiser's Community Health Initiatives program, and reducing the environmental impact of its facilities (Meyers, 2008). One way in which Kaiser invests in the communities it serves is by partnering with local health departments and public hospitals to invest in HIT and provide technical assistance for implementing quality improvement initiatives in safety-net settings. The Community Health Initiatives program supports increasing food access, such as establishing weekly farmers' markets at its hospitals and medical office buildings to improve access to healthy foods, and promoting healthy environments, such as supporting health promotion programs in the workplace (Kaiser Permanente, 2015). Efforts to build healthier facilities include infrastructure investments to use more environmentally friendly construction and design elements and minimize the environmental impact of its processes on the local communities. For example, Kaiser replaced the use of regular diesel fuel with more environmentally friendly biodiesel fuel for its supply transportation and courier trucks to reduce harmful emissions and air pollution in its local communities (Meyers, 2008).

Data and Measurement

Measurement is fundamental to quality improvement in health care (Berwick et al., 2008). Health care providers that aim to improve care for their socially at-risk patients maintain not only performance data but also data on the distribution of performance by various indicators

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[1] Personal communication, Susan Knudson (HealthPartners) to Charles Baumgart (committee member), December 14, 2015.
[2] Ibid.

of social risk. Studies have found that regularly collecting consistent race, ethnicity, and language data among a provider's patient population and analyzing performance data disaggregated by race, ethnicity, and language to identify existing health disparities within their organizations are critical to effective interventions to reduce disparities (Ayanian and Williams, 2007; Chin et al., 2012; CMS, 2015; HHS, 2011a; Jones et al., 2010; Thorlby et al., 2011). Similarly, a systematic review of high-performing hospitals found that performance monitoring and reporting is essential to improving overall quality of care (Taylor et al., 2015). Together, this literature suggests that collecting consistent data by social risk factors and disaggregating data by indicators of social risk may also be critical for improving care for socially at-risk populations. Although there is little evidence to date that simply collecting and reporting data effectively improves care and reduces disparities, some studies have shown that providing performance data stratified by race and ethnicity increased awareness about disparities; these studies suggest that those who identify disparities may be motivated to seek to understand the drivers of and to reduce disparities (Chin et al., 2012; RWJF, 2011; Sequist et al., 2010).

Because socially at-risk populations are disproportionately represented in a small subset of providers, internal performance data may not be sufficient to reveal health disparities. Health care providers may also need to routinely compare their performance to those of peer organizations and top performers and consider examining community-level health data, such as those identified in coordination with local public health agencies, in addition to population health data on their patients. Early adopters of race and ethnicity data collection and stratified reporting identified a lack of standardized data as a primary challenge to comparing performance to peer organizations (RWJF, 2011; Thorlby et al., 2011). In previous reports, the IOM recommended core metrics for health and health care (IOM, 2015d), population health measures (IOM, 2013b), standardized data on race, ethnicity, and language (IOM, 2009), and social and behavioral domains and measures that may capture additional social risk factors for poor health (IOM, 2015a).

Furthermore, as described in the earlier section on publicly reported performance data, because there is little consistency in top performers across measures, domains, and time (e.g., (Gaskin et al., 2011; Girotra et al., 2012; Jha et al., 2005, 2008; McHugh et al., 2014; Shwartz et al., 2011), it will be important to identify appropriate peers for comparison. Maintaining accurate and complete data may also facilitate the identification of clinical, behavioral, and social needs within a provider's patient population. Comprehensive needs assessment is discussed in the next section.

Montefiore Health System and Denver Health provide case studies of two safety-net systems that developed analytic tools to better identify socially at-risk patients. Montefiore Health System, a safety-net provider located in the Bronx in New York City, internally developed the Clinical Looking Glass, a data analytics tool to identify and reach out to patients whose conditions are not under control and who have missed follow-up appointments (Hostetter and Klein, 2015). Denver Health, the largest public safety-net provider in Colorado, developed an analytic tool that enhances standard clinical predictive models using a set of rules to segment its patient population into risk tiers matched to clinical and social services and staffing models (Hostetter and Klein, 2015; Johnson et al., 2015). This tool is described in more detail in Box 2-3.

BOX 2-3
Data and Measurement Case Study: Denver Health Risk Tiering

Denver Health is a public, integrated health system and the largest provider of services to Medicaid and uninsured patients in Colorado. In 2012, Denver Health received a $19.8 million grant from the Center for Medicare & Medicaid Innovation to implement its 21st Century Care program to provide primary care to publicly insured and uninsured patients using collaborative care teams and enhanced health information technology (HIT). As part of this campaign, Denver Health developed and implemented an analytic tool to segment its patient population into four risk tiers ranging from healthy individuals in the general population (Tier 1) to superusers, or patients with multiple, complex physical, mental health, and social needs who have multiple emergency department visits and hospital admissions (Tier 4). Risk tiers are matched to enhanced staffing models and enhanced clinical and HIT services designed to meet patients' needs, with more intensive staffing and services for patients with higher risk. The initial model used only claims data to identify costly patients, but clinicians reported that this model could not help them distinguish between costly patients insensitive to change and high opportunity patients, or patients with potentially avoidable utilization who are also amenable to help from primary care team intervention. In response, Denver Health assembled a team including executive leadership, clinicians, pharmacists, quality improvement experts, health services researchers, actuaries, and HIT developers to develop a set of tier promotion rules to supplement predictive modeling. These rules promote patients to a higher tier based on clinical data, provider observations, and social risk factors (e.g., lack of social support). For example, a healthy mother may be promoted from Tier 1 to Tier 2 if she has a history of adverse birth outcomes, such as delivering an infant with low birth weight. Denver Health is continuing to refine the tool, including developing rules to better account for patients' social risk factors (Hostetter and Klein, 2015; Johnson et al., 2015).

Comprehensive Needs Assessment

Health care providers that seek to improve care for socially at-risk populations periodically may need to conduct comprehensive needs assessments to proactively identify patients at risk. Anticipating patient needs is fundamental to improving care for all patients (IOM, 2001). However, socially at-risk populations are likely to have unmet social needs that affect health care outcomes (NASEM, 2016) that may not be identified through clinical data alone. Thus, comprehensive needs assessments may need to include not only consideration of clinical and behavioral risk factors as is done for the general population, but also social risks that may be related to health care outcomes. As such, comprehensive needs assessments may use clinical risk prediction models, but may also require further analysis of performance and other data (for example, patient-generated data, clinical notes, or physician observations) to identify unmet needs. In addition to needs or deficits, providers should also identify strengths and capacities of patients and communities that can be built on or enhanced (Green and Haines, 2016). Identifying and building on community assets and capacities may be important for sustaining community engagement (HHS, 2011b). Kaiser Permanente's Colorado region developed a proactive health assessment tool described in Box 2-4 that provides a case study in proactively identifying health risks among Medicare beneficiaries (Kaiser Permanente Colorado, 2014). Among other results, an evaluation of the program found that beneficiaries and their

physicians reported that the tool helped raise potential health risks that otherwise would not have been raised during office visits and that diagnosis and treatment of depression among older beneficiaries increased (ACHP, n.d.-c; Groshek, 2015; Kaiser Permanente Colorado, 2014). In addition to analyzing internal data, health care providers may also review the literature and the experiences of peers to anticipate potential needs and assets in their patient population. However, needs and assets are specific to a particular community context and programs designed for other settings and their results may not be generalizable. Additionally, health care providers can also conduct needs assessments collaboratively with stakeholders from the community, such as local health and public health departments and community organizations. For example, under the Affordable Care Act, nonprofit (tax-exempt) hospitals must conduct a community health needs assessment every 3 years. Recommendations for conducting these assessments suggest that important components include defining the community; building shared ownership of community health and shared commitment to improving community health; data collection using shared measurement; data analysis, including stratified reporting by indicators of social risk, identification of assets, capacities, and unmet needs; defining priorities and a plan to address unmet needs; and engaging the community through continuous communication throughout all stages of the needs assessment and dissemination of results (Barnett, 2011; CDC, 2013; CHA, 2013; Myers and Stoto, 2006; Rosenbaum, 2013).

BOX 2-4
Comprehensive Needs Assessment Case Study: Kaiser Permanente Colorado's PATHWAAY Program

Kaiser Permanente Colorado is the largest nonprofit health care provider in Colorado. Its service area includes disproportionate shares of Hispanic individuals, persons with limited English proficiency, and individuals who reside in a designated health professional shortage area. Kaiser Permanente's Colorado region established the Proactive Assessment of Total Health and Wellness to Add Active Years (PATHWAAY) Program to collect patient-generated health data through a comprehensive Total Health Assessment (THA) to develop a Personal Prevention Plan (PPP) to address potential health risks and improve health for Medicare beneficiaries. Prior to an annual wellness visit, Medicare beneficiaries complete a THA via the Kaiser Permanente patient portal. The THA screens members for health risks such as falls, urinary incontinence, malnutrition, pain, frailty, and mood disorders. The THA responses are processed, scored, and entered into the patient's electronic health record (EHR). Identified risks are sent to the patient's care team. A registered nurse reviews the THA and calls beneficiaries to follow up on the THA, to gather more information as needed, and to discuss the risks and health concerns identified through the THA in more detail. Together with the beneficiary's primary care physician, the nurse then creates a PPP that specifies activities to address any risks. For example, nurses may recommend that beneficiaries at risk for incontinence attend incontinence class. At the beneficiary's appointment, the primary care physician reviews the THA and PPP with the patient to confirm and update risks and plans to address them. At the end of the visit, patients receive a printed copy of their PPP and information from the THA, PPP, and the visit are entered into the patient's EHR. The organization reported that following implementation, beneficiaries reported that they raised issues through the THA they normally might not have raised during an office visit and physicians reported that the THA instigated conversations with beneficiaries about issues that otherwise may not have been raised. Beneficiaries also reported taking increased actions to improve their health. Of

beneficiaries who reported taking action, a majority reported that their health improved "a great deal." Following implementation, Kaiser Permanente's Colorado region also saw increased and sustained attendance at balance and incontinence classes and increased diagnosis and treatment of depression among older beneficiaries (ACHP, n.d.-c; Groshek, 2015; Kaiser Permanente Colorado, 2014).

As implied by these components, results from the needs assessment can help providers to identify the scope, intensity, and scale of needed services. Health care providers may also use the results of these needs assessment activities to prioritize which needs the provider can best meet by balancing factors such as patient priorities based on intensity of need, whether the need is amenable to help from clinical or social interventions, and the health care provider's own capacity to address a need. Finally, once unmet and potential needs have been identified (and prioritized), health care providers may need to design or identify programs and an implementation strategy to respond to these needs. Examples of practice transformation and other programs are described in the following section on collaborative partnerships.

Collaborative Partnerships

Improving health and health care outcomes for socially at-risk populations will require collaboration within and between care teams within health systems, across clinical settings, and between health systems and external partners, such as community organizations and public health and social service agencies (Bachrach et al., 2014; Schor et al., 2011). While this is also true of improving care for the general population, collaborative partnerships both within and beyond the clinical care setting may be particularly relevant for socially at-risk populations that are likely to have both medically complex conditions and unmet social needs (Bachrach et al., 2014; Schor et al., 2011). Collaboration within health systems internally include practice redesigns to provide integrated, accessible, coordinated care, such as through implementation of a patient-centered medical home (Sandberg et al., 2014; VanDeusen-Lukas et al., 2015; Wagner et al., 2014). Studies, including two systematic reviews, found that implementing a patient-centered medical home shows promise to improve quality of care and patient experiences, while less is known about the effect of implementing a medical home on clinical outcomes, utilization, and costs (Jackson et al., 2013; Jaen et al., 2010; Rathert et al., 2013). However, evidence from implementing the Chronic Care Model and other integrated care delivery models show the potential of such integrated models to improve both quality of care and clinical outcomes (Coleman et al., 2009; Davis et al., 2015). Although much of the evidence on medical homes comes from the general population or patients with chronic illnesses, some safety-net organizations have successfully transformed their practice into medical homes (Wagner et al., 2014).

With respect to specific elements of clinical practice designs that may improve care for socially at-risk populations, strategies to increase access to care that show promise for improving quality of care and patient outcomes include providing same-day appointments; extending practice hours in ambulatory care; using clinical staff such as paramedics and medical assistants and trained, unlicensed lay persons like community health workers and informal caregivers to support care management; and delivering care through new technologies such as mobile screening units and video and telephone consultations that bring clinical care to patients (Felland et al., 2013; IOM, 2015c; McCarthy and Mueller, 2008; Sandberg et al., 2014). Studies have also

reported that multidisciplinary teams have been important to improving care for high-cost Medicare beneficiaries (Davis et al., 2015) and reducing disparities (Chin et al., 2007, 2012; Peek et al., 2007). Furthermore, involving non-physician clinicians in care teams may improve care and reduce disparities. For example, a systematic review of interventions to reduce racial and ethnic disparities in diabetes found that nurse- and pharmacist-led interventions showed promise to improve quality of care and health outcomes and potential to reduce disparities (Peek et al., 2007). Studies of high-performing hospitals also identified coordinated, patient-centered care teams and multidisciplinary and multi-level collaboration and communication as important factors for achieving high performance (Curry et al., 2011; Taylor et al., 2015).

Whereas the medical home concept pertains principally to primary care settings, health systems may also redesign care across broader medical neighborhoods to coordinate and collaborate with other health care providers regionally (including specialists and hospitals) and in which performance measurement and payment systems are aligned to promote shared accountability for outcomes across the continuum of care (Fisher, 2008; Greenberg et al., 2014; Huang and Rosenthal, 2014; Silow-Carroll and Rodin, 2013; Van Citters et al., 2013). For example, a systematic review of high-performing hospitals identified collaboration and communication with other health services providers (including ambulatory care providers, administrators, and social services) throughout a patient's care trajectory as a crucial improvement strategy (Taylor et al., 2015). Similarly, a systematic review of interventions to improve asthma outcomes among racial and ethnic minority adults found that Health Resources and Services Administration Health Disparities Collaboratives, established to bring together CHCs to share knowledge and disseminate quality improvement techniques, showed potential to improve quality of care (Press et al., 2012). An evaluation of MetroHealth Care Plus, a CMS waiver program comprising a regional health improvement collaborative of three safety-net organizations in Ohio that enrolled uninsured poor patients and accepted a CMS-approved budget-neutral cap, provides further evidence of the potential for collaborative partnerships to improve not only health care quality and outcomes, but also value. Program results reported improved diabetes outcomes among enrollees with diabetes and reduced hospitalizations among all enrollees (Cebul et al., 2015). Additionally, expenditures for enrollees averaged more than one quarter lower than the budget-neutral cap—$415.05 total per member-month costs for MetroHealth Care Plus compared to $582.41 for the budget-neutral cap or $104 million in actual services provided compared to the $145 million CMS-allowed expenditure cap for all eligible enrollees (Cebul et al., 2015).

Health care providers may also need to partner with community organizations and social service and public health agencies to link clinical interventions to social programs necessary to support healthy individuals, such as mental health services, substance abuse treatment, housing assistance, vocational counseling, legal assistance, and assistance with government benefits (Bachrach et al., 2014; Foubister, 2013; McCarthy and Cohen, 2013; Sandberg et al., 2014; Schor et al., 2011). For example, one study found that including and coordinating care among patients, family members, providers, and social service agencies showed "modest success" at improving care for high-cost, high-risk Medicare beneficiaries (Davis et al., 2015, p.e350). Case studies of three U.S. regions with relatively high performance despite greater poverty compared to other top-performing areas also identified collaboration across a wide variety of stakeholders (e.g., providers, patients, payers, nonprofit community organizations, academic researchers, faith-based groups, educators, etc.) as pivotal to achieving high performance (McCarthy et al., 2014). The case studies also identified shared commitment to increasing access to care for

underserved populations and regional cooperation to invest in and use health information technology as well as engage the community as important to increasing access to care for underserved populations and to achieve high performance overall (McCarthy et al., 2014).

As alluded to in these examples of regional collaboration, government can be an important facilitator of collaborative partnerships by providing leadership, aligning financial incentives (payment reform), promoting shared accountability (through both performance measurement/public reporting and financial accountability), and by facilitating enhanced funding for social risk factors related to health (e.g., through value-based purchasing methods, identifying and coordinating nonprofit community benefit funds, and by aligning non–health sector funding to promote population health) (Chin et al., 2012; Corrigan and Fisher, 2014; IOM, 2014, 2015b; Jones et al., 2010). For example, the New York City Department of Health and Mental Hygiene established the Citywide Colon Cancer Control Coalition that convened a wide range of stakeholders in 2003 to implement a multifaceted program, including an annual summit of stakeholders, a public education campaign, outreach and education to health care providers, patient navigator programs, and a quality improvement initiative to successfully increase colon cancer screening among all New York City residents age 50 and older and also to reduce racial and ethnic disparities (Itzkowitz et al., 2016).

Hennepin Health is a county-based, safety-net accountable care organization (ACO) that provides another example of a health department serving a critical role as a convener that shares insights into how various stakeholders can better coordinate care and align resources (Sandberg et al., 2014). Hennepin Health, originally created in 2011 as a Medicaid demonstration project comprising a partnership of the Hennepin County Human Services and Public Health Department and three health providers—a safety-net hospital and medical center, a community health center, and a nonprofit health maintenance organization serving Medicare and Medicaid beneficiaries—used primary care coordination teams to coordinate care across clinical, behavioral, and social service settings (including collaborations with homeless shelters, housing agencies, and law enforcement agencies); invested in HIT infrastructure to integrate information from and facilitate coordination across clinical, behavioral and social services; and expanded its workforce to include specialized nurse care coordinators, pharmacists, dentists, behavioral health staff, social workers, community health workers, housing and social services navigators, vocational counselors, emergency medical services staff, and HIT professionals (Sandberg et al., 2014). Early results from Hennepin Health suggest that this type of collaborative model may be effective at reducing ED visits and increasing the quality of care for chronic illnesses (diabetes, vascular diseases, asthma care), while also achieving cost savings (Sandberg et al., 2014). Hennepin Health's shared savings model has allowed the ACO to reinvest savings ($1.6 million in 2012, $1.1 million in 2013, and $1.3 million in 2014) in practice redesigns, quality improvement initiatives, and in the workforce (including increased staffing as well as education and trainings).

The Colorado Coalition for the Homeless' Stout Street Health Center and Renaissance Stout Street Lofts and UPMC *for You*'s Cultivating Health for Success program provide examples of more targeted collaboration between federally qualified health centers and supportive housing. Specifically, both programs integrate supportive housing, a community health center medical home, and case management services to provide health care services and social interventions for homeless individuals with the goal of reducing ED visits and inpatient care and increasing planned primary and behavioral health care visits and self-management behaviors (Klein, 2014; Lovelace, 2016). The Colorado Coalition for the Homeless program is

described in more detail in Box 2-5. Early results concordant with other evaluations of supportive housing (Buchanan et al., 2009; Larimer et al., 2009; Martinez and Burt, 2006) suggest that integrating housing and clinical and behavioral services can potentially reduce health care utilization and costs, and improve health status (including clinical and mental health outcomes) and housing stability. Specifically, the Colorado Coalition evaluation found an average cost savings of $4,745 per person largely achieved through lower utilization of health and emergency services (Klein, 2014).

BOX 2-5
Collaborative Partnerships Case Study: Colorado Coalition for the Homeless' Stout Street Health Center and Renaissance Stout Street Lofts

The Colorado Coalition for the Homeless integrates health care and social services for the homeless under a "housing first" model. Housing first is grounded in the idea that homeless persons must have safe housing before medical and social needs (including multiple chronic medical conditions, substance abuse, and serious mental illness) can be addressed. In September 2014, the coalition opened its Stout Street Health Center and Renaissance Stout Street Lofts, a federally qualified health center and 78 supportive housing units for formerly homeless individuals and families collocated in a building in downtown Denver. The new facility cost $35 million to construct, which the coalition financed using funding from two federal programs designed to encourage investments that benefit underserved populations (the Low Income Housing Tax Credit Program and the New Market Tax Credit Program), as well as grant funding from Denver city and county, foundations and individual donors, and the Health Resources and Services Administration. Expected funding from Colorado's Medicaid expansion under the Affordable Care Act was key to the coalition's long-term funding. Stout Street Health Center provides health care services, including primary care, mental health care, substance abuse treatment, dental and vision care, and social services to about 18,000 current homeless persons, formerly homeless persons residing in coalition residences, and formerly homeless persons who no longer live in coalition residences. The health center assigns patients to a care team that includes a primary care physician, a physician's assistant, a social worker, and part-time psychiatrists and pharmacists who coordinate to provide physical and behavioral health services. A case manager and patient navigator plan and provide social supports such as housing support, career and educational counseling, life skills and financial literacy training, and assistance applying for government benefits. The patient navigator also facilitates access to health care services, including accompanying patients to appointments. The Renaissance Stout Street Lofts comprise 59 one-bedroom and 19 two-bedroom apartments that share a common kitchen, outdoor courtyard, computer room, and on-site laundry. Social workers and an on-site property manager are also available to residents as needed. Based on results from a pilot program and an early evaluation of a subset of program participants, the coalition expects integrating housing and clinical and behavioral services will reduce health care utilization and costs, and improve health status (including clinical and mental health outcomes) and housing stability. Specifically, the Colorado Coalition evaluation found an average cost savings of $4,745 per person largely achieved through lower utilization in health and emergency services (Colorado Coalition for the Homeless, 2014, 2015; Klein, 2014).

Care Continuity

Health care providers ensure care continuity by actively managing patient and enrollee care trajectories across the continuum of care (Bodenheimer, 2008; Haggerty et al., 2003). Although continuity of care is a goal of high-quality care for all populations, it is particularly salient for socially at-risk populations that potentially receive care and services from multiple providers and across a broad range of health care providers, social service agencies, and community organizations (Davis et al., 2015; IOM, 2013a). For socially at-risk populations, ensuring care continuity may include anticipating and managing transitions as a patient progresses through an illness, across sites of clinical care, between clinical care teams, between health care providers and social service agencies and organizations, and through differing intensities of needed services.

Studies of top-performing hospitals, including a systematic review, identified effective communication and coordination across departments and diverse staff types and levels to ensure seamless transitions as a key strategy to achieving high performance (Curry et al., 2011; Taylor et al., 2015). Actively managing transitions may require designing care to prevent losing patients or enrollees during transitions and to promote patient engagement in their care (discussed in the next section), such as through the use of coordinated care teams, trained care coordinators, and patient navigators, or through collocating services. A review of randomized controlled trials of interventions to improve care transitions among chronically ill adults found that all but one trial showed positive effects on at least one outcome—clinical outcomes, patient experience, quality of life, health care use, and costs—regardless of the specific type of intervention (e.g., discharge planning and follow up, case management, coaching, patient education, peer support, telehealth) (Naylor et al., 2011).

For socially at-risk populations, health care providers may need to build on existing models of managing care transitions designed to manage transitions between health care settings (e.g., Coleman et al., 2006; Naylor et al., 2004) to ensure that transitions involving partnering community organizations and public health and social service agencies are also managed (IOM, 2013a). Importantly, care trajectories are not linear. Patients may cycle through periods of progress and relapse, and providers must be prepared to monitor patients who have seen improvements to ensure that progress is maintained, as well as to detect any setbacks or deteriorations, and to intensify services as needed (Davis et al., 2015).

The Visiting Nurse Service of New York's VNS Choice Health Plans, Fallon Health's NaviCare and Summit ElderCare, and Geisinger Health Plan's Medically Complex Medical Home provide examples of health care providers actively managing care transitions across care settings, across a patient's illness trajectory, and across a patient's needed intensity of services. VNS Choice Health Plans is a managed care organization serving New York City residents who are eligible for Medicare, Medicaid, or both that assigns a care manager to coordinate services across members of the patient's care team using a variety of tailored interventions. The care team may include physicians, nurses, social workers, pharmacists, home health aides, and informal family caregivers, and interventions include teaching enrollees and family caregivers about self-management, care team meetings to review care needs and care plans, and using HIT to facilitate monitoring care for clinicians and decision making for enrollees (Johnson and McCarthy, 2013). Similarly, in 2010, Fallon Health developed the NaviCare program, which uses a navigator to coordinate services between patients living at home or in an assisted living or long-term care facility and members of the enrollee's primary care team (ACHP, n.d.-a). Fallon Health also oversees the Summit ElderCare program, established in 1995, which centers around the

provision of services such as medical care, rehabilitation services, meals, recreation, and occasions for social interaction at one of its adult day health centers, and also provides in-home support, such as assistance with bathing and dressing, preparing meals, and managing medications (ACHP, n.d.-a). Geisinger Health Plan's Medically Complex Medical Home uses a two-person team to manage a patient's transition from an inpatient facility back home, and is discussed in more detail in Box 2-6. Geisinger estimates that the program achieved cost reductions of approximately 20 percent or $1,000 per member per month largely through reductions in ED visits and hospital admissions (ACHP, n.d.-b).

BOX 2-6
Care Continuity Case Study: Geisinger Health Plan's Medically Complex Medical Home Program

Geisinger Health Plan is a nonprofit health maintenance organization that serves beneficiaries in Delaware, Maine, New Jersey, Pennsylvania, and West Virginia. Geisinger's Medically Complex Medical Home program provides a two-person care team to help medically complex elderly patients transition from an inpatient facility (e.g., a hospital or skilled nursing facility) back home. High-risk patients are identified through utilization data (i.e., frequent hospitalizations or emergency department [ED] visits) and referral. Once identified, a patient is assigned a care team consisting of a nurse care manager and a trained community health worker. The team visits patients before discharge to introduce themselves and to schedule a home visit within 2 days of discharge. At the home visit, the care team identifies clinical and social barriers to managing the patient's health condition. Clinical barriers include problems with medication adherence, while social barriers may include inability to prepare food or poor access to transportation. The care team may also identify safety issues in the patient's home, such as stairs or wires that could lead to falls. The care team also facilitates ways to address these barriers like arranging for support services such as meal delivery to the home or transportation services. During the home visit, the care team also reviews the patient's Self-Management Action Plan, a tailored care plan that is easily understood by the patient. Once patients are no longer deemed as high risk, the care team returns the patient to his or her primary care medical home team, typically after 3 to 6 months. However, some patients may continue to be high risk and remain in the program indefinitely. Other patients may also be referred to hospice if appropriate, in which case the care team continues to manage the patient's care until his or her death. A study of a 9-month pilot of the program covering 75 medically complex patients reported increased numbers of identified and managed gaps in care related to standards of care, safety, end-of-life planning, and medication management and potentially avoided ED visits and hospitalizations. Geisinger estimates that the effect of addressing these gaps in care resulted in cost savings of $1,000 per member per month, a cost reduction of approximately 20 percent achieved largely through avoided ED visits and hospitalizations (ACHP, n.d.-b).

Engaging Patients in Their Care

Engaging patients in their care describes designing care tailored to meet an individual patient's needs and designing care that promotes the health of patients in the community setting by supporting individuals in managing their health conditions, participating in their health care decisions, taking up healthy behaviors, and reducing health risks. Engaging patients in their care may be particularly relevant for patients with social risk factors who have greater barriers to

accessing care, more unhealthy behaviors, more numerous and more complex health needs, more difficulty managing their health and social needs, and more limited health literacy (NASEM, 2016). Tailoring care to meet a patient's specific needs includes identifying the appropriate form and intensity of delivering integrated, accessible clinical care for individual patients and identifying and linking clinical care to interventions that address that patient's specific clinical and social needs. This may include providing individualized care as well as culturally tailoring and targeting care for socially at-risk subpopulations. Individualized care planning has shown promise to improve care for high-cost Medicare beneficiaries (Davis et al., 2015), and several systematic reviews found that culturally tailoring interventions to meet patients' needs has been effective at reducing racial and ethnic disparities with respect to HIV prevention, the quality of diabetes care and diabetes outcomes, depression prevention and treatment, and breast cancer screening (Chin et al., 2012; Hemmige et al., 2012; Masi et al., 2007; Peek et al., 2007; Van Voorhees et al., 2007). Additionally, because health literacy is a mediator of social risk factors and health outcomes (NASEM, 2016), tailoring care for low literate patients or providing health literacy training to providers to improve communication with low literate patients may be one strategy to reduce disparities (Logan et al., 2015). Because patients' needs will change over time, providers will need to reevaluate the type and intensity of services required periodically (Davis et al., 2015).

Promoting functioning in the community includes supporting patients to promote healthy behaviors (such as healthy eating, physical activity, tobacco cessation), prevent health problems (such as managing physical safety in the home, identifying symptoms of poor health, and barriers to medication adherence), and manage health and social needs (such as providing transportation assistance and facilitating access to healthy meals) in the home, neighborhood, and other chosen environments (Schor et al., 2011). To support individuals in the community, health care providers may need to first collect and maintain current databases about a patient's contact information (telephone number, email address, or place of residence) to ensure the provider can find the patient. Specific types of activities providers may practice to engage patients in their care and to support individuals in the community include educating patients about self-management, healthy behaviors, and care coordination; providing culturally sensitive, targeted, and tailored patient education; providing tailored care plans easily understood by patients; employing patient navigators or health navigators to facilitate access to and to coordinate care between clinical and social services; using new technologies (e.g., telephone consultation, videoconference, mobile screenings, smartphone apps) to promote healthy behaviors and reduce health risks; and engaging patients through community organizations (such as community centers, homeless shelters, religious organizations, and schools) to promote healthy behaviors and participation in their health care. For example, the Health Plan of San Mateo, a local public health plan that serves historically underserved residents of San Mateo County, California, (e.g., older adults, persons with disabilities) meets with enrollees at sites convenient to them in the community setting (e.g., adult day health centers, dialysis facilities, mental health support group meetings) to conduct health risk assessments and provide care planning[3] (CHCS PRIDE, 2014).

Patient education about self-management, healthy behaviors, and care coordination, especially interactive approaches, has shown promise to reduce racial and ethnic disparities (Chin et al., 2012; Naylor et al., 2012; Press et al., 2012; Sajid et al., 2012). Specifically, systematic reviews reported that culturally tailored patient education can improve asthma

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[3] Personal communication, Doug McCarthy (The Commonwealth Fund) to staff.

outcomes (Press et al., 2012), educational programs can increase knowledge and informed decision making about prostate cancer screenings (Sajid et al., 2012), and tailored patient education combined with patient navigation can increase adherence to colorectal cancer screenings (Naylor et al., 2012). With respect to patient navigators alone, studies have shown that employing patient navigators or care managers to facilitate access to clinical and social services, coordinate care, and support self-management has shown promise to improve care for high-cost Medicare beneficiaries and to reduce racial and ethnic disparities (Chin et al., 2012; Davis et al., 2015; Itzkowitz et al., 2016; Naylor et al., 2012). Furthermore, studies suggest that both clinical patient navigators (e.g., nurses and physicians) and non-clinical patient navigators (such as community health workers and informal caregivers who receive training as peer patient navigators) can be effective at improving care, including improving screening rates and reducing hospital admissions and readmissions for socially at-risk populations (e.g., Davis et al., 2015; Itzkowitz et al., 2016; Lasser et al., 2011). One systematic review found moderate evidence that telephone support combined with patient navigation increased cervical cancer screening for racial and ethnic minority women (Glick et al., 2012). Studies also reported that when identifying activities to support patients that best meet their needs, clinicians may also need to address patients' practical opportunities and the patient's degree of agency for desired behaviors (Ferrer et al., 2014, 2016). For example, although patients might find increasing physical activity to be a desirable goal and have access to outdoor opportunities for physical activity (such as a public park), barriers such as feeling unsafe in their neighborhood after dark and lack of peer or partner support may inhibit them from actually taking up more physical activity (Ferrer et al., 2014).

West County Health Centers, the Citywide Colon Cancer Control Coalition (C5), and Genesys HealthWorks provide case studies of interventions to support self-management and promote healthy behavior change to individuals residing in the community (Hostetter and Klein, 2014; Klein and McCarthy, 2010). West County Health Centers is a federally qualified health center located in rural Sonoma County, California, that uses video conferencing to enable clinicians to monitor patients' care at home, include non-local family members to participate in their relative's care and decision making (such as during end-of-life discussions), encourage healthy behavior changes, and coordinate care between patients and other health care providers and social services agencies, such as behavioral health staff and social workers (Hostetter and Klein, 2014). This video conferencing technology also enables nurses on home visits to confer with other clinicians. The New York City Department of Health and Mental Hygiene together with other stakeholders established the C5 initiative in 2003 to reduce racial and ethnic health disparities in colon cancer screening (Itzkowitz et al., 2016). Among other activities, including public education campaigns, provider education, a direct referral initiative to streamline referrals, and a colonoscopy quality improvement initiative, C5 used foundation grant funding to demonstrate that employing patient navigators could increase colonoscopy adherence and reduce the no-show rate. The program also showed that lay adults older than age 50 who have undergone a colonoscopy can be trained to effectively serve as peer patient navigators, and modeling of the program demonstrated that employing patient navigators to improve colonoscopy adherence among low socioeconomic status African-American and Latino populations is cost-effective. Patient navigation has expanded substantially beyond the initial demonstration and is considered a focus of C5. Overall, the initiative was effective at increasing the screening rate from 42 percent in 2003 to 70 percent in 2014, and also eliminated racial and ethnic disparities. Genesys HealthWorks is an integrated practice model in Genessee County,

Michigan, that includes the use of health navigators to provide self-management support and encourage behavior change (described in more detail in Box 2-7). An evaluation found that the program significantly increased healthy behaviors and self-management behaviors and decreased unhealthy behaviors (Genesys, 2013; Holtrop et al., 2008; Klein and McCarthy, 2010).

BOX 2-7
Engaging Patients in Their Care Case Study: Genesys HealthWorks

Genesys HealthWorks is an integrated practice model designed to improve quality and reduce costs. Genesys Health System, a nonprofit, integrated health care system, developed the model to improve the health of residents of Genesee County, Michigan, which covers the greater metropolitan area of Flint. As part of the model, Genesys HealthWorks implemented an integrated self-management support program using health navigators to support patients to adopt healthy behaviors such as physical activity and healthy eating and to reduce health risks like tobacco use. The health navigator program began as a variety of pilot programs and research projects in 1997 and evolved to target patients receiving care at a Genesys Health System patient-centered medical home practice and low-income, uninsured enrollees of the Genesee Health Plan. Unlike other case management programs that target high-risk patients, HealthWorks supports a wide range of patients from healthy patients to those with chronic illnesses to those recovering from acute care episodes; the intensity of services provided depends on the patient's clinical and social needs.

Health navigators come from a variety of backgrounds and include nurses, health educators, social workers, and dieticians. Navigators receive additional trainings in which they develop community resource guides, practice health behavior change counseling techniques, and develop referral plans with participating practices. Patients may be referred to the program by a provider or a community agency that identifies an acute or chronic need or a health goal, if a health care need is identified upon enrollment in the health plan, or following an emergency department visit. When a patient is referred to the program, health navigators make an initial, 45 minute- to 1-hour call or in-person visit to assess the patient's needs, and then make brief, 10 to 15 minute follow-up calls. The number of follow-up calls is determined by each individual patient's needs. During the calls, the health navigator helps patients identify a health behavior area for improvement, set goals, identify barriers and facilitators to achieving behavior changes, and identify specific actions patients can take to achieve their goals. The navigator subsequently uses motivational interviewing techniques to encourage, support, and guide patients to achieve their health goals. The health navigator also reinforces the patient's referring clinician's recommendations related to healthy behaviors (e.g., medication adherence, preventive screenings, self-management behaviors) and refers patients to community resources, such as counseling services for depressed patients. Patients are reassessed at 3 and 6 months from baseline. At both the initial assessment and follow up, navigators send a letter to the patient's referring clinician detailing the patient's progress. An evaluation of the program found that participants significantly increased healthy behaviors, decreased unhealthy behaviors, and increased self-management behaviors. Specific improvements include reduction in current smokers, increased physical activity, and increased medication adherence, among others (Genesys, 2013; Holtrop et al., 2008; Klein and McCarthy, 2010).

APPLYING SYSTEMS PRACTICES

To illustrate how each systems practice might be applied to a specific practice setting in a specific community context, the committee developed a pair of working examples for the inpatient and outpatient settings. Importantly, these case examples are hypothetical and illustrative of how an organization might implement a systems approach to achieving health equity, but are not intended as a one-size-fits-all approach. As described in detail in the preceding sections, the specific interventions appropriate to a given care setting will depend on the specific needs of a provider's patient population, each individual health care provider's available resources, and the local community context. Table 2-2 provides working examples of systems practices applied to reducing readmissions in the hospital setting and to improving diabetes care in the outpatient setting.

TABLE 2-2 Working Examples of the Systems Practices Applied to Reducing Readmissions and Improving Diabetes Care

	Reducing Readmissions	Improving Diabetes Care
Patient-centered care: Involve patients and their family members in decision making and tailor care to reflect their goals, values, and capacities.	Congruence with the patient's values is a key determinant of progress. For example, adherence to a modified diet is more likely if the diet is tailored to the patient's customary eating patterns. A "try it and see" approach is often necessary. Relationships and trust, the foundations of patient-centered care, take time to build.	Patient-centered plans to achieve clinical goals for glucose and blood pressure control account for individualized benefits and risks of treatment, including avoidance of hypoglycemia or hypotension in older patients with diabetes at increased risk of falling due to underlying frailty. Affordability of specific medications and glucose testing supplies under the patient's health plan is carefully considered.
Community-informed care: Tailor care to reflect the social context of the community.	Personnel managing care transitions do so with practical knowledge of available resources in their catchment areas.	Bilingual and bicultural staff members are included in primary care teams and community health workers when appropriate. Dietary recommendations are tailored to reflect patient preferences. Clinical teams assess patients' feasible opportunities for a healthy diet and activity patterns within their neighborhood contexts. Clinical teams partner with and refer patients to community resources to support healthy diet and promote physical activity.
Commitment to health equity: Value and promote health equity and hold yourself accountable.	Hospital leaders seek to close gaps in readmissions rates for socially at-risk patients.	Leaders of a physician group within a Medicare accountable care organization (ACO) or Medicare Advantage health plan seek to reduce disparities in control of glucose and blood pressure for socially at-risk patients with diabetes.

	Reducing Readmissions	Improving Diabetes Care
Data and measurement: Understand your population's health, risk factors, and patterns of care.	Hospital leaders compare performance in readmission rates across the spectrum of social risks. Hospital leaders benchmark hospital performance against high-performing organizations' outcomes. The hospital collects qualitative data from families and caregivers to understand the drivers of higher readmission rates among some socially at-risk subpopulations.	ACO or health plan leaders compare medical group performance in diabetes care across the spectrum of social risks. The ACO or MA health plan benchmarks performance to identify high-performing medical groups with improved outcomes. The ACO or health plan collects qualitative data obtained to understand reasons why socially at-risk patients may have greater difficulty adhering to medications or recommendations for diet and exercise.
Comprehensive needs assessment: Identify, anticipate, and respond to clinical and social needs.	Through local data gathering and insights from published literature, organizations identify factors influencing short-interval readmissions. Drivers often include clinical and social factors, such as poor access to primary care follow up, financial barriers to outpatient care or filling prescriptions, difficulty arranging transportation to appointments, limited understanding of self-care, poor communication and coordination across providers (e.g., lost referrals), undiagnosed behavioral illness, an unstable home environment, or homelessness.	Through local data gathering and insights from published studies, organizations identify factors influencing control of glucose and blood pressure among patients with diabetes. Key factors often include overly complex medication regimens, out-of-pocket costs for medications, and neighborhoods that have limited access to healthy foods and to safe areas for regular exercise.
Collaborative partnerships: Collaborate within and across provider teams and service sectors to deliver care.	The hospital creates internal teams and external partners to address the major drivers of readmissions. These teams often employ nurse care managers to review discharge arrangements and ensure that the hospital and home-based components have been addressed with sound plans in place. The hospital employs community health workers linked to the care team to provide home-based health coaching. The hospital collaborates with external partners such as community organizations and public health and social service agencies to address issues beyond the reach of the health system such as housing and food insecurity, income support, and transportation needs.	The Medicare ACO or health plan develops a diabetes registry to monitor diabetes quality indicators and provide real-time feedback and reminders to patients and their primary care teams. The ACO or health plan partners with local pharmacies to enhance medication teaching and monitoring of glucose and blood pressure to supplement primary care clinic visits. The ACO or health plan employs community health workers linked to the primary care team to provide home-based health coaching related to nutrition and exercise. The ACO or health plan also partners with public health and social service agencies or community organizations to improve access to healthy foods and safe areas to exercise, as well as to identify and address competing priorities such as instability in housing or home utility services.

	Reducing Readmissions	Improving Diabetes Care
Care continuity: Plan care and care transitions to prepare for patients' changing clinical and social needs.	The hospital recognizes discharge not as a singular event but as a transitional period that the patient's hospital care team must actively manage. Specific strategies to manage a patient's discharge into the community may include ensuring that discharge summaries reach the outpatient clinicians, follow-up appointments are set prior to discharge, patients receive the self-management support to improve chronic disease management, and palliative care options are explored when appropriate.	Diabetes is recognized as a chronic condition requiring an integrated approach to medication, diet, exercise, and weight management to bridge clinic and home settings. Primary care teams engage and coordinate care with specialists for patients with glucose or blood pressure levels that are particularly difficult to control.
Engaging patients in their care: Design individualized care to promote the health of individuals in the community setting.	Hospitals identify formal and informal caregivers and financial and non-financial resources available to patients living in the community that can support patients' self-management and help reduce their risk of readmission. The patient's care team carefully reviews the patient's functioning in daily life (e.g., giving attention to memory loss, help with activities of daily living, or limited English language proficiency).	Patients receive self-management support and peer coaching to improve chronic disease management of their diabetes. Enhanced use of mobile applications and sensors enable patients to record and communicate their home glucose and blood pressure readings to their primary care teams and receive real-time guidance on medication changes and lifestyle modifications to improve their diabetes control.

RESOURCE AND SUSTAINABILITY CONSIDERATIONS

The successful examples of health care organizations improving the quality of care, health, and other outcomes for socially at-risk populations arise in specific contexts and may not generalize to other health systems. Although the majority of examples reviewed did not explicitly address financial considerations, among other factors, both the availability of resources and the alignment of financial incentives that makes such efforts sustainable are prerequisites for the adoption and sustainability of these practices and programs. For example, a hospital with a larger endowment may have been able to invest in HIT to such an extent that implementing referral tracking for at-risk patients is a modest and feasible step, whereas a hospital with fewer resources would require a more substantial infrastructure investment to do so. Health systems can incentivize reducing disparities by not only explicitly directing resources to reduce disparities or targeting interventions at socially at-risk populations (such as greater investment in safety-net systems), but also by incorporating equitable care and outcomes into accountability processes (e.g., Berenson and Shih, 2012; Chin, 2016; Zuckerman et al., 2016).

In terms of sustainability, interventions that improve health and quality of care or reduce utilization and cost are only feasible to maintain if the provider is paid in such a way that profits (revenues minus costs) are higher with the intervention than without. This alignment could be the result of risk-sharing models that incentivize better population health management such as global payments and shared savings models or bonuses and penalties related to quality and cost. Note that even where there is financial alignment, organizations with fewer resources may not be able to respond to them without upfront resources. Because most of the efforts described in this report involve fixed costs and potentially shared benefits across multiple payers, their economic feasibility depends not only on Medicare's payment system but that of other payers. As health care systems increasingly partner with external organizations (e.g., community organizations) and other sectors (e.g., social services and public health), this will include non–health care stakeholders as well (e.g., Corrigan and Fisher, 2014), All things equal, environments in which a greater share of a provider's revenue is derived from such value-based payment (VBP) methods will make it more sustainable for providers to invest in programs that generate value (improved quality and reduced cost).

OPPORTUNITIES TO ADDRESS THE GAPS IN KNOWLEDGE

The committee concluded that six systems practices as well as the foundational element of providing community-informed and patient-centered care described in this chapter show promise to improve care and achieve high-performing care for socially at-risk populations. Although the evidence on the effects of these practices to improve care is limited, these systems practices and the overall systems approach the committee proposes can be used to generate testable hypotheses. In other words, these practices and the systems approach can also be seen of as aspirational and innovative service delivery models that can be rigorously evaluated with respect to their potential to improve or achieve high-performing care for socially at-risk populations and to reduce health inequities, as well as the resource requirements to do so. Additionally, although these practices primarily pertain to care delivery, they are best supported when financial incentives are aligned, and thus may further warrant testing in the context of VBP methods that support the sustainability of these interventions. Organizations that apply these

systems practices going forward offer an opportunity to test the effect of these systems practices on both health equity goals and goals to improve value.

PUTTING THIS REPORT IN CONTEXT

The committee's task in this report centered on identifying what high-quality health systems serving socially at-risk populations do to achieve good health outcomes for their patients. As the committee described, it is possible to deliver high-quality care to these populations and the committee outlined certain systems practices that could be instrumental in achieving that goal. In the next and third report, the committee returns to the question of which social risk factors could be accounted for in Medicare value-based purchasing programs and how. Nothing in this second report should be interpreted as foreshadowing what the committee will conclude in the third report. However, this report does show that socially at-risk populations do not need to experience low-quality care and bad health care outcomes. With adequate resources, providers can feasibly respond to incentives to deliver high-quality and good value care to socially at-risk populations.

REFERENCES

ACHP (Alliance of Community Health Plans). n.d.-a. *Fallon Health Navicare and Summit Eldercare programs*. http://www.achp.org/wp-content/uploads/report-Innovation_ElderCare_FALLON.pdf (accessed December 14, 2015).

ACHP. n.d.-b. *Geisinger Health Plan's medically complex medical home program*. http://www.achp.org/wp-content/uploads/report-Innovation_ElderCare_GEISINGER.pdf (accessed December 14, 2015).

ACHP. n.d.-c. *Kaiser Permanente's PATHWAAY program*. http://www.achp.org/wp-content/uploads/report-Innovation_ElderCare5.8.15_KP.pdf (accessed December 14, 2015).

Alley, D. E., C. N. Asomugha, P. H. Conway, and D. M. Sanghavi. 2016. Accountable health communities—addressing social needs through Medicare and Medicaid. *New England Journal of Medicine* 374(1):8–11.

American Medical Group Association. 2011. *HealthPartners medical group: Integrating the equitable care aim*. 60(9):1–11. http://www.amga.org/wcm/PI/Acclaim/2010/healthpartners.pdf (accessed January 27, 2016).

Anderson, L. M., S. C. Scrimshaw, M. T. Fullilove, J. E. Fielding, and J. Normand. 2003. Culturally competent healthcare systems. A systematic review. *American Journal of Preventive Medicine* 24(3 Suppl):68–79.

Appari, A., E. M. Johnson, and D. L. Anthony. 2014. Information technology and hospital patient safety: A cross-sectional study of us acute care hospitals. *American Journal of Managed Care* 20(11 Spec No. 17):eSP39–eSP47.

Ayanian, J. Z., and R. A. Williams. 2007. Principles for eliminating racial and ethnic disparities in healthcare. In *Eliminating healthcare disparities in America: Beyond the IOM report*. New York, NY: Humana Press.

Bach, P. B., H. H. Pham, D. Schrag, R. C. Tate, and J. L. Hargraves. 2004. Primary care physicians who treat blacks and whites. *New England Journal of Medicine* 351(6):575–584.

Bachrach, D., H. Pfister, K. Wallis, and M. Lipson. 2014. *Addressing patients' social needs: An emerging business case for provider investment*. http://www.commonwealthfund.org/~/media/files/publications/fund-

report/2014/may/1749_bachrach_addressing_patients_social_needs_v2.pdf (accessed March 8, 2016).

Barnato, A. E., F. L. Lucas, D. Staiger, D. E. Wennberg, and A. Chandra. 2005. Hospital-level racial disparities in acute myocardial infarction treatment and outcomes. *Medical Care* 43(4):308–319.

Barnett, K. 2011. *Best practices for community health needs assessment and implementation strategy development: A review of scientific methods, current practices, and future potential.* http://www.phi.org/uploads/application/files/dz9vh55o3bb2x56lcrzyel83fwfu3mvu24oqqvn5z6qa eiw2u4.pdf (accessed March 10, 2016).

Berenson, J., and A. Shih. 2012. Higher readmissions at safety-net hospitals and potential policy solutions. *Issue Brief (Commonwealth Fund)* 34:1–16.

Berwick, D. M., T. W. Nolan, and J. Whittington. 2008. The triple aim: Care, health, and cost. *Health Affairs* 27(3):759–769.

Blustein, J., W. B. Borden, and M. Valentine. 2010. Hospital performance, the local economy, and the local workforce: Findings from a U.S. national longitudinal study. *PLoS Medicine* 7(6):e1000297.

Bodenheimer, T. 2008. Coordinating care—a perilous journey through the health care system. *New England Journal of Medicine* 358(10):1064–1071.

Brooks-Carthon, J. M., A. Kutney-Lee, D. M. Sloane, J. P. Cimiotti, and L. H. Aiken. 2011. Quality of care and patient satisfaction in hospitals with high concentrations of black patients. *Journal of Nursing Scholarship* 43(3):301–310.

Buchanan, D., R. Kee, L. S. Sadowski, and D. Garcia. 2009. The health impact of supportive housing for HIV-positive homeless patients: A randomized controlled trial. *American Journal of Public Health* 99(Suppl 3):S675–S680.

CDC (Centers for Disease Control and Prevention). 2013. *Community health assessment for population health improvement: Resource of most frequently recommended health outcomes and determinants.* http://wwwn.cdc.gov/CommunityHealth/PDF/Final_CHAforPHI_508.pdf (accessed March 10, 2016).

CDC. 2015. *Health equity.* http://www.cdc.gov/chronicdisease/healthequity (accessed February 16, 2016).

Cebul, R. D., T. E. Love, D. Einstadter, A. S. Petrulis, and J. R. Corlett. 2015. Metrohealth care plus: Effects of a prepared safety net on quality of care in a Medicaid expansion population. *Health Affairs* 34(7):1121–1130.

CHA (Catholic Health Association of the United States). 2013. *Assessing and addressing community health needs.* https://www.chausa.org/docs/default-source/general-files/cb_assessingaddressing-pdf.pdf?sfvrsn=4 (accessed March 10, 2016).

Chatterjee, P., K. E. Joynt, E. J. Orav, and A. K. Jha. 2012. Patient experience in safety-net hospitals: Implications for improving care and value-based purchasing. *Archives of Internal Medicine* 172(16):1204–1210.

CHCS (Center for Healh Care Strategies Inc.) PRIDE. 2014. *Health plan of San Mateo.* http://www.chcs.org/media/PRIDE-Profiles_HPSM-formatted-2.pdf (accessed March 8, 2016).

Chien, A. T., M. H. Chin, A. M. Davis, and L. P. Casalino. 2007. Pay for performance, public reporting, and racial disparities in health care: How are programs being designed? *Medical Care Research and Review* 64(5 Suppl):283s–304s.

Chin, M. H. 2016. Creating the business case for achieving health equity. *Journal of General Internal Medicine* [Epub ahead of print].

Chin, M. H., A. E. Walters, S. C. Cook, and E. S. Huang. 2007. Interventions to reduce racial and ethnic disparities in health care. *Medical Care Research and Review* 64(5 Suppl):7s–28s.

Chin, M. H., A. R. Clarke, R. S. Nocon, A. A. Casey, A. P. Goddu, N. M. Keesecker, and S. C. Cook. 2012. A roadmap and best practices for organizations to reduce racial and ethnic disparities in health care. *Journal of General Internal Medicine* 27(8):992–1000.

Chisholm, L., R. Weech-Maldonado, A. Laberge, F. C. Lin, and K. Hyer. 2013. Nursing home quality and financial performance: Does the racial composition of residents matter? *Health Services Research Journal* 48(6 Pt 1):2060–2080.

CMS (Centers for Medicare & Medicaid Services). 2015. *The CMS equity plan for improving quality in Medicare*. https://www.cms.gov/About-CMS/Agency-Information/OMH/OMH_Dwnld-CMS_EquityPlanforMedicare_090615.pdf (accessed February 2, 2016).

Coleman, E. A., C. Parry, S. Chalmers, and S. J. Min. 2006. The care transitions intervention: Results of a randomized controlled trial. *Archives of Internal Medicine* 166(17):1822–1828.

Coleman, K., B. T. Austin, C. Brach, and E. H. Wagner. 2009. Evidence on the chronic care model in the new millennium. *Health Affairs* 28(1):75–85.

Colorado Coalition for the Homeless. 2014. *What we do: Renaissance Stout Street Lofts*. http://www.coloradocoalition.org/what_we_do/what_we_do_housing/stoutstreetlofts.aspx (accessed February 2, 2016).

Colorado Coalition for the Homeless. 2015. *What we do: Healthcare*. http://www.coloradocoalition.org/what_we_do/healthcare.aspx (accessed February 2, 2016).

Cooper, L. A., and N. R. Powe. 2004. *Disparities in patient experiences, health care processes, and outcomes: The role of patient-provider racial, ethnic, and language concordance*. http://www.commonwealthfund.org/programs/minority/cooper_raceconcordance_753.pdf (accessed March 8, 2016).

Corrigan, J. M., and E. S. Fisher. 2014. *Accountable health communities: Insights from state health reform initiatives*. http://tdi.dartmouth.edu/images/uploads/AccountHealthComm-WhPaperFinal.pdf (accessed March 7, 2016).

Crawford, M. J., D. Rutter, C. Manley, T. Weaver, K. Bhui, N. Fulop, and P. Tyrer. 2002. Systematic review of involving patients in the planning and development of health care. *BMJ* 325(7375):1263–1265.

Culler, S. D., L. Schieb, M. Casper, I. Nwaise, and P. W. Yoon. 2010. Is there an association between quality of in-hospital cardiac care and proportion of low-income patients? *Medical Care* 48(3):273–278.

Curry, L. A., E. Spatz, E. Cherlin, J. W. Thompson, D. Berg, H. H. Ting, C. Decker, H. M. Krumholz, and E. H. Bradley. 2011. What distinguishes top-performing hospitals in acute myocardial infarction mortality rates?: A qualitative study. *Annals of Internal Medicine* 154(6):384–390.

Davis, K., S. C. Schoenbaum, and A. M. Audet. 2005. A 2020 vision of patient-centered primary care. *Journal of General Internal Medicine* 20(10):953–957.

Davis, K., C. Buttorff, B. Leff, Q. M. Samus, S. Szanton, J. L. Wolff, and F. Bandeali. 2015. Innovative care models for high-cost Medicare beneficiaries: Delivery system and payment reform to accelerate adoption. *American Journal of Managed Care* 21(5):e349–e356.

DeMars, C. 2014. *Community advisory councils: Innovation from the ground up*. http://www.ohsu.edu/xd/outreach/oregon-rural-health/about/rural-health-conference/upload/2014-Thu-TC_general_oct2014_FINAL_CD_Rural-Health-Conference.pdf (accessed February 2, 2016).

Dimick, J., J. Ruhter, M. V. Sarrazin, and J. D. Birkmeyer. 2013. Black patients more likely than whites to undergo surgery at low-quality hospitals in segregated regions. *Health Affairs* 32(6):1046–1053.

Felland, L. E., A. E. Lechner, and A. Sommers. 2013. *Improving access to specialty care for Medicaid patients: Policy issues and options*. http://www.commonwealthfund.org/~/media/files/publications/fund-report/2013/jun/1691_felland_improving_access_specialty_care_Medicaid_v2.pdf (accessed March 8, 2016).

Ferrer, R. L., I. Cruz, S. Burge, B. Bayles, and M. I. Castilla. 2014. Measuring capability for healthy diet and physical activity. *Annals of Family Medicine* 12(1):46–56.

Ferrer, R. L., S. Burge, R. Palmer, and I. Cruz. 2016. Practical opportunities for healthy diet and physical activity: Relationship to intentions, behaviors, and body-mass index. *Annals of Family Medicine* 2016;14(2):109–116

Fisher, E. S. 2008. Building a medical neighborhood for the medical home. *New England Journal of Medicine* 359(12):1202–1205.

Foubister, V. 2013. *Case study: Louisiana's poor rankings make improving birth outcomes a state imperative*. http://www.commonwealthfund.org/publications/newsletters/quality-matters/2013/february-march/case-study (accessed February 4, 2016).

Frimpong, J. A., B. E. Jackson, L. M. Stewart, K. P. Singh, P. A. Rivers, and S. Bae. 2013. Health information technology capacity at federally qualified health centers: A mechanism for improving quality of care. *BMC Health Services Research Journal* 13:35.

Gaskin, D. J., C. S. Spencer, P. Richard, G. F. Anderson, N. R. Powe, and T. A. Laveist. 2008. Do hospitals provide lower-quality care to minorities than to whites? *Health Affairs* 27(2):518–527.

Gaskin, D. J., C. S. Spencer, P. Richard, G. Anderson, N. R. Powe, and T. A. LaVeist. 2011. Do minority patients use lower quality hospitals? *Inquiry* 48(3):209–220.

Gehlert, S., D. Sohmer, T. Sacks, C. Mininger, M. McClintock, and O. Olopade. 2008. Targeting health disparities: A model linking upstream determinants to downstream interventions. *Health Affairs* 27(2):339–349.

Genesys. 2013. *Health navigators*. http://www.genesys.org/GRMCWeb.nsf/0/1FA06E5540B456BE852576CF00631DF7 (accessed February 2, 2016).

Girotra, S., P. Cram, and I. Popescu. 2012. Patient satisfaction at America's lowest performing hospitals. *Circulation: Cardiovascular Quality and Outcomes* 5(3):365–372.

Glick, S. B., A. R. Clarke, A. Blanchard, and A. K. Whitaker. 2012. Cervical cancer screening, diagnosis and treatment interventions for racial and ethnic minorities: A systematic review. *Journal of General Internal Medicine* 27(8):1016–1032.

Goldman, L. E., E. Vittinghoff, and R. A. Dudley. 2007. Quality of care in hospitals with a high percent of Medicaid patients. *Medical Care* 45(6):579–583.

Goldman, L. E., P. W. Chu, H. Tran, M. J. Romano, and R. S. Stafford. 2012. Federally qualified health centers and private practice performance on ambulatory care measures. *American Journal of Preventive Medicine* 43(2):142–149.

Green, G. P., and A. Haines. 2016. *Assest building and community development*. Los Angeles, CA: Sage Publications, Inc.

Greenberg, J. O., M. L. Barnett, M. A. Spinks, J. C. Dudley, and J. P. Frolkis. 2014. The "medical neighborhood": Integrating primary and specialty care for ambulatory patients. *Journal of the American Medical Association* 174(3):454–457.

Groeneveld, P. W., S. B. Laufer, and A. M. Garber. 2005. Technology diffusion, hospital variation, and racial disparities among elderly Medicare beneficiaries: 1989–2000. *Medical Care* 43(4):320–329.

Groshek, M. 2015. *Patient-generated health data*. http://www.Americantelemed.org/docs/default-source/ata2015/operationalizing-telemedicine-in-managed-care-full-compressed1.pdf?sfvrsn=2 (accessed February 2, 2016).

Haggerty, J. L., R. J. Reid, G. K. Freeman, B. H. Starfield, C. E. Adair, and R. McKendry. 2003. Continuity of care: A multidisciplinary review. *BMJ* 327(7425):1219–1221.

Halfon, N., P. Long, D. I. Chang, J. Hester, M. Inkelas, and A. Rodgers. 2014. Applying a 3.0 transformation framework to guide large-scale health system reform. *Health Affairs* 33(11):2003–2011.

Hall, Y. N., P. Xu, G. M. Chertow, and J. Himmelfarb. 2014. Characteristics and performance of minority-serving dialysis facilities. *Health Services Research Journal* 49(3):971–991.

Hasnain-Wynia, R., D. W. Baker, D. Nerenz, J. Feinglass, A. C. Beal, M. B. Landrum, R. Behal, and J. S. Weissman. 2007. Disparities in health care are driven by where minority patients seek care:

Examination of the hospital quality alliance measures. *Archives of Internal Medicine* 167(12):1233–1239.

Hasnain-Wynia, R., R. Kang, M. B. Landrum, C. Vogeli, D. W. Baker, and J. S. Weissman. 2010. Racial and ethnic disparities within and between hospitals for inpatient quality of care: An examination of patient-level hospital quality alliance measures. *Journal of Health Care for the Poor and Underserved* 21(2):629–648.

Hawe, P., A. Shiell, and T. Riley. 2009. Theorising interventions as events in systems. *American Journal of Community Psychology* 43(3–4):267–276.

Health Share of Oregon. n.d. *Charter: Health Share of Oregon Community Advisory Council*. http://www.healthshareoregon.org/pdfs/HSO-Community-Advisory-Council-Charter-8-30-121.pdf (accessed February 2, 2016).

Hemmige, V., R. McFadden, S. Cook, H. Tang, and J. A. Schneider. 2012. HIV prevention interventions to reduce racial disparities in the United States: A systematic review. *Journal of General Internal Medicine* 27(8):1047–1067.

HHS (Department of Health and Human Services). 2011a. *HHS action plan to reduce racial and ethnic health disparities*. http://minorityhealth.hhs.gov/npa/files/plans/hhs/hhs_plan_complete.pdf (accessed February 2, 2016).

HHS. 2011b. *Principles of community engagement*. http://www.atsdr.cdc.gov/communityengagement/pdf/PCE_Report_508_FINAL.pdf (accessed March 10, 2016).

Holtrop, J. S., S. A. Dosh, T. Torres, and Y. M. Thum. 2008. The community health educator referral liaison: A primary care practice role for promoting healthy behaviors. *American Journal of Preventive Medicine* 35(5 Suppl):S365–S372.

Hostetter, M., and S. Klein. 2014. *In focus: Innovating care delivery in the safety net*. http://www.commonwealthfund.org/publications/newsletters/quality-matters/2014/december-2014-january-2015/in-focus (accessed February 2, 2016).

Hostetter, M., and S. Klein. 2015. *In focus: Segmenting populations to tailor services, improve care*. http://www.commonwealthfund.org/publications/newsletters/quality-matters/2015/june/in-focus (accessed February 2, 2016).

HRSA (Health Resources and Services Administration). n.d. *What are federally qualified health centers (FQHCs)?* http://www.hrsa.gov/healthit/toolbox/RuralHealthITtoolbox/Introduction/qualified.html (accessed January 27, 2016).

Huang, X., and M. B. Rosenthal. 2014. Transforming specialty practice—the patient-centered medical neighborhood. *New England Journal of Medicine* 370(15):1376–1379.

IOM (Institute of Medicine). 2000. *America's health care safety net: Intact but endangered*. Washington, DC: National Academy Press.

IOM. 2001. *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.

IOM. 2003. *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: The National Academies Press.

IOM. 2009. *Race, ethnicity, and language data: Standardization for health care quality improvement*. Washington, DC: The National Academies Press.

IOM. 2010. *Future directions for the national healthcare quality and disparities reports*. Washington, DC: The National Academies Press.

IOM. 2013a. *Best care at lower cost: The path to continuously learning health care in America*. Washington, DC: The National Academies Press.

IOM. 2013b. *Toward quality measures for population health and the leading health indicators*. Washington, DC: The National Academies Press.

IOM. 2014. *Population health implications of the Affordable Care Act: Workshop summary*. Washington, DC: The National Academies Press.

IOM. 2015a. *Capturing social and behavioral domains and measures in electronic health records: Phase 2*. Washington, DC: The National Academies Press.

IOM. 2015b. *Financing population health improvement: Workshop summary*. Washington, DC: The National Academies Press.

IOM. 2015c. *Transforming health care scheduling and access: Getting to now*. Washington, DC: The National Academies Press.

IOM. 2015d. *Vital signs: Core metrics for health and health care progress*. Washington, DC: The National Academies Press.

Itzkowitz, S. H., S. J. Winawer, M. Krauskopf, M. Carlesimo, F. H. Schnoll-Sussman, K. Huang, T. K. Weber, and L. Jandorf. 2016. New york citywide colon cancer control coalition: A public health effort to increase colon cancer screening and address health disparities. *Cancer* 122(2):269–277.

Jackson, G. L., B. J. Powers, R. Chatterjee, J. P. Bettger, A. R. Kemper, V. Hasselblad, R. J. Dolor, R. J. Irvine, B. L. Heidenfelder, A. S. Kendrick, R. Gray, and J. W. Williams. 2013. Improving patient care. The patient centered medical home. A systematic review. *Annals of Internal Medicine* 158(3):169–178.

Jaen, C. R., R. L. Ferrer, W. L. Miller, R. F. Palmer, R. Wood, M. Davila, E. E. Stewart, B. F. Crabtree, P. A. Nutting, and K. C. Stange. 2010. Patient outcomes at 26 months in the patient-centered medical home national demonstration project. *Annals of Family Medicine* 8(Suppl 1):S57–S67.

Jha, A. K., and A. M. Zaslavsky. 2014. Quality reporting that addresses disparities in health care. *Journal of the American Medical Association* 312(3):225–226.

Jha, A. K., Z. Li, E. J. Orav, and A. M. Epstein. 2005. Care in U.S. hospitals—the hospital quality alliance program. *New England Journal of Medicine* 353(3):265–274.

Jha, A. K., E. J. Orav, Z. Li, and A. M. Epstein. 2007. Concentration and quality of hospitals that care for elderly black patients. *Archives of Internal Medicine* 167(11):1177–1182.

Jha, A. K., E. J. Orav, J. Zheng, and A. M. Epstein. 2008. The characteristics and performance of hospitals that care for elderly hispanic Americans. *Health Affairs* 27(2):528–537.

Jha, A. K., E. J. Orav, and A. M. Epstein. 2011. Low-quality, high-cost hospitals, mainly in South, care for sharply higher shares of elderly black, hispanic, and Medicaid patients. *Health Affairs* 30(10):1904–1911.

Johnson, B., and D. McCarthy. 2013. *The visiting nurse service of New York's choice health plans: Continuous care management for dually eligible Medicare and Medicaid beneficiaries*. http://www.commonwealthfund.org/publications/case-studies/2013/jan/vnsnys-choice-program (accessed February 2, 2016).

Johnson, T. L., D. Brewer, R. Estacio, T. Vlasimsky, M. J. Durfee, K. R. Thompson, R. M. Everhart, D. J. Rinehart, and H. Batal. 2015. Augmenting predictive modeling tools with clinical insights for care coordination program design and implementation. *eGEMS* 3(1):1181.

Jones, R. G., A. N. Trivedi, and J. Z. Ayanian. 2010. Factors influencing the effectiveness of interventions to reduce racial and ethnic disparities in health care. *Social Science & Medicine* 70(3):337–341.

Joynt, K. E., and A. K. Jha. 2011. Who has higher readmission rates for heart failure, and why? Implications for efforts to improve care using financial incentives. *Circulation: Cardiovascular Quality and Outcomes* 4(1):53–59.

Joynt, K. E., Y. Harris, E. J. Orav, and A. K. Jha. 2011. Quality of care and patient outcomes in critical access rural hospitals. *Journal of the American Medical Association* 306(1):45–52.

Joynt, K. E., E. J. Orav, and A. K. Jha. 2013. Mortality rates for Medicare beneficiaries admitted to critical access and non-critical access hospitals, 2002–2010. *Journal of the American Medical Association* 309(13):1379–1387.

Joynt, K. E., N. Sarma, A. M. Epstein, A. K. Jha, and J. S. Weissman. 2014. Challenges in reducing readmissions: Lessons from leadership and frontline personnel at eight minority-serving hospitals. *The Joint Commission Journal on Quality and Patient Safety* 40(10):435–437.

Kaiser Permanente. 2015. *Community health initiatives*. http://share.kaiserpermanente.org/wp-
        content/uploads/2015/11/CHI-Overview-09302015.pdf (accessed February 2, 2016).
Kaiser Permanente. n.d. *Health disparities*. http://share.kaiserpermanente.org/article/health-disparities-
        programs (accessed February 2, 2016).
Kaiser Permanente Colorado. 2014. *Community benefit strategy report for community health needs*.
        http://share.kaiserpermanente.org/wp-content/uploads/2013/10/KPCO_CB-Strategy-
        Report_101514.pdf (accessed February 2, 2016).
Karve, A. M., F. S. Ou, B. L. Lytle, and E. D. Peterson. 2008. Potential unintended financial
        consequences of pay-for-performance on the quality of care for minority patients. *American
        Heart Journal* 155(3):571–576.
Klein, S. 2014. *Colorado coalition for the homeless: A model of supportive housing*.
        http://www.commonwealthfund.org/publications/newsletters/quality-matters/2014/october-
        november/case-study (accessed February 2, 2016).
Klein, S., and D. McCarthy. 2010. *Genesys healthworks: Pursuing the triple aim through a primary care-
        based delivery system, integrated self-management support, and community partnerships*.
        http://www.commonwealthfund.org/publications/case-studies/2010/jul/genesys-healthworks
        (accessed February 2, 2016).
Klein, S., D. McCarthy, and A. Cohen. 2014. *Health Share of Oregon: A community-oriented approach
        to accountable care for Medicaid beneficiaries*.
        http://www.commonwealthfund.org/publications/case-studies/2014/oct/health-share-oregon-aco-
        case-study (accessed February 2, 2016).
Laiteerapong, N., J. Kirby, Y. Gao, T. C. Yu, R. Sharma, R. Nocon, S. M. Lee, M. H. Chin, A. G. Nathan,
        Q. Ngo-Metzger, and E. S. Huang. 2014. Health care utilization and receipt of preventive care for
        patients seen at federally funded health centers compared to other sites of primary care. *Health
        Services Research Journal* 49(5):1498–1518.
Lantz, P. M., R. L. Lichtenstein, and H. A. Pollack. 2007. Health policy approaches to population health:
        The limits of medicalization. *Health Affairs* 26(5):1253–1257.
Larimer, M. E., D. K. Malone, M. D. Garner, D. C. Atkins, B. Burlingham, H. S. Lonczak, K. Tanzer, J.
        Ginzler, S. L. Clifasefi, W. G. Hobson, and G. A. Marlatt. 2009. Health care and public service
        use and costs before and after provision of housing for chronically homeless persons with severe
        alcohol problems. *Journal of the American Medical Association* 301(13):1349–1357.
Lasser, K. E., J. Murillo, S. Lisboa, A. N. Casimir, L. Valley-Shah, K. M. Emmons, R. H. Fletcher, and J.
        Z. Ayanian. 2011. Colorectal cancer screening among ethnically diverse, low-income patients: A
        randomized controlled trial. *Archives of Internal Medicine* 171(10):906–912.
Li, Y., C. Harrington, D. B. Mukamel, X. Cen, X. Cai, and H. Temkin-Greener. 2015. Nurse staffing
        hours at nursing homes with high concentrations of minority residents, 2001–11. *Health Affairs*
        34(12):2129–2137.
Lie, D. A., E. Lee-Rey, A. Gomez, S. Bereknyei, and C. H. Braddock III. 2011. Does cultural competency
        training of health professionals improve patient outcomes?: A systematic review and proposed
        algorithm for future research. *Journal of General Internal Medicine* 26(3):317–325.
Logan, R., W. Wong, M. Villaire, G. Daus, T. A. Parnell, E. Willis, and M. K. Paasche-Orlow. 2015.
        Health literacy: A necessary element for achieving health equity. http://nam.edu/perspectives-
        2015-health-literacy-a-necessary-element-for-achieving-health-equity (accessed March 7, 2016).
Lopez, L., and A. K. Jha. 2013. Outcomes for whites and blacks at hospitals that disproportionately care
        for black Medicare beneficiaries. *Health Services Research Journal* 48(1):114–128.
Lopez, L., N. Cook, and L. Hicks. 2015. Improved quality of care for cardiovascular disease for Latinos
        seen in high proportion Latino vs. low proportion Latino clinics. *Ethnicity & Disease* 25(1):3–10.
Lovelace, J. 2016. *Integrating health care and supported housing to improve the health and well-being of
        the homeless: A population health case study*. http://nam.edu/wp-
        content/uploads/2016/03/Integrating-Health-Care-and-Supported-Housing-to-Improve-the-

Health-and-Well-Being-of-the-Homeless-A-Population-Health-Case-Report.pdf (accessed March 29, 2016).

Lutfiyya, N. M., D. K. Bhat, S. R. Gandhi, C. Nguyen, V. L. Weidenbacher-Hoper, and M. S. Lipsky. 2007. A comparison of quality of care indicators in urban acute care hospitals and rural critical access hospitals in the United States. *International Journal for Quality in Health Care* 19(3):141–149.

Ly, D. P., L. Lopez, T. Isaac, and A. K. Jha. 2010. How do black-serving hospitals perform on patient safety indicators?" Implications for national public reporting and pay-for-performance. *Medical Care* 48(12):1133–1137.

Marshall, L., V. Harbin, J. Hooker, J. Oswald, and L. Cummings. 2012. Safety net hospital performance on national quality of care process measures. *Journal for Healthcare Quality* 34(2):21–31.

Martinez, T. E., and M. R. Burt. 2006. Impact of permanent supportive housing on the use of acute care health services by homeless adults. *Psychiatric Services* 57(7):992–999.

Masi, C. M., D. J. Blackman, and M. E. Peek. 2007. Interventions to enhance breast cancer screening, diagnosis, and treatment among racial and ethnic minority women. *Medical Care Research and Review* 64(5 Suppl):195s–242s.

Mayr, F. B., S. Yende, G. D'Angelo, A. E. Barnato, J. A. Kellum, L. Weissfeld, D. M. Yealy, M. C. Reade, E. B. Milbrandt, and D. C. Angus. 2010. Do hospitals provide lower quality of care to black patients for pneumonia? *Critical Care Medicine* 38(3):759–765.

McCarthy, D., and A. Cohen. 2013. *The Cincinnati Children's Hospital Medical Center's asthma improvement collaborative: Enhancing quality and coordination of care.* http://www.commonwealthfund.org/publications/case-studies/2013/jan/cincinnati-childrens (accessed February 4, 2016).

McCarthy, D., and K. Mueller. 2008. *The New York City Health and Hospitals Corporation: Transforming a public safety net delivery system to achieve higher performance.* http://www.commonwealthfund.org/~/media/files/publications/fund-report/2008/oct/the-new-york-city-health-and-hospitals-corporation--transforming-a-public-safety-net-delivery-system/mccarthy_nychlthospitalscorpcasestudy_1154-pdf.pdf (accessed February 4, 2016).

McCarthy, D., K. Mueller, and I. Tillman. 2009. *HealthPartners: Consumer-focused mission and collaborative approach support ambitious performance improvement agenda.* http://www.commonwealthfund.org/publications/case-studies/2009/jun/healthpartners-consumer-focused-mission (accessed February 2, 2016).

McCarthy, D., S. Klein, and A. Cohen. 2014. *Opportunity for regional improvement: Three case studies of local health system performance.* http://www.commonwealthfund.org/~/media/files/publications/case-study/2014/apr/1737_mccarthy_regional_case_study_synthesis_v2.pdf (accessed March 8, 2016).McHugh, M., R. Kang, and R. Hasnain-Wynia. 2009. Understanding the safety net: Inpatient quality of care varies based on how one defines safety-net hospitals. *Medical Care Research and Review* 66(5):590–605.

McHugh, M., J. Neimeyer, E. Powell, R. K. Khare, and J. G. Adams. 2014. Is emergency department quality related to other hospital quality domains? *Academic Emergency Medicine* 21(5):551–557.

Medicare.gov. n.d. *About Hospital Compare data.* https://www.Medicare.gov/hospitalcompare/Data/About.html (accessed February 16, 2016).

Meghani, S. H., J. M. Brooks, T. Gipson-Jones, R. Waite, L. Whitfield-Harris, and J. A. Deatrick. 2009. Patient-provider race-concordance: Does it matter in improving minority patients' health outcomes? *Ethnicity & Health* 14(1):107–130.

Meyers, K. 2008. *Beyond equal care: How health systems can impact racial and ethnic health disparities.* http://share.kaiserpermanente.org/media_assets/pdf/communitybenefit/assets/pdf/our_work/global/BeyondEqualCare2001_08.pdf (accessed February 2, 2016).

Miller, S. C., G. Papandonatos, M. Fennell, and V. Mor. 2006. Facility and county effects on racial differences in nursing home quality indicators. *Social Science & Medicine* 63(12):3046–3059.

Mouch, C. A., S. E. Regenbogen, S. L. Revels, S. L. Wong, C. H. Lemak, and A. M. Morris. 2014. The quality of surgical care in safety net hospitals: A systematic review. *Surgery* 155(5):826–838.

Myers, S., and M. A. Stoto. 2006. *Criteria for assessing the usefulness of community health assessments: A literature review*. http://www.rand.org/pubs/technical_reports/TR314.html (accessed March 10, 2016).

NASEM (National Academies of Sciences, Engineering, and Medicine). 2016. *Accounting for social risk factors in Medicare payment: Identifying social risk factors*. Washington, DC: The National Academies Press.

Naylor, K., J. Ward, and B. N. Polite. 2012. Interventions to improve care related to colorectal cancer among racial and ethnic minorities: A systematic review. *Journal of General Internal Medicine* 27(8):1033–1046.

Naylor, M. D., D. A. Brooten, R. L. Campbell, G. Maislin, K. M. McCauley, and J. S. Schwartz. 2004. Transitional care of older adults hospitalized with heart failure: A randomized, controlled trial. *Journal of the American Geriatrics Society* 52(5):675–684.

Naylor, M. D., L. H. Aiken, E. T. Kurtzman, D. M. Olds, and K. B. Hirschman. 2011. The care span: The importance of transitional care in achieving health reform. *Health Affairs* 30(4):746–754.

O'Malley, A. S., H. H. Pham, D. Schrag, B. Wu, and P. B. Bach. 2007. Potentially avoidable hospitalizations for COPD and pneumonia: The role of physician and practice characteristics. *Medical Care* 45(6):562–570.

Peek, M. E., A. Cargill, and E. S. Huang. 2007. Diabetes health disparities: A systematic review of health care interventions. *Medical Care Research and Review* 64(5 Suppl):101s–156s.

Pirraglia, P. A., A. M. Kilbourne, Z. Lai, P. D. Friedmann, and T. P. O'Toole. 2011. Colocated general medical care and preventable hospital admissions for veterans with serious mental illness. *Psychiatric Services* 62(5):554–557.

Popescu, I., R. M. Werner, M. S. Vaughan-Sarrazin, and P. Cram. 2009. Characteristics and outcomes of America's lowest-performing hospitals: An analysis of acute myocardial infarction hospital care in the United States. *Circulation: Cardiovascular Quality and Outcomes* 2(3):221–227.

Popescu, I., B. K. Nallamothu, M. S. Vaughan-Sarrazin, and P. Cram. 2010. Racial differences in admissions to high-quality hospitals for coronary heart disease. *Archives of Internal Medicine* 170(14):1209–1215.

Press, V. G., A. A. Pappalardo, W. D. Conwell, A. T. Pincavage, M. H. Prochaska, and V. M. Arora. 2012. Interventions to improve outcomes for minority adults with asthma: A systematic review. *Journal of General Internal Medicine* 27(8):1001–1015.

Rangrass, G., A. A. Ghaferi, and J. B. Dimick. 2014. Explaining racial disparities in outcomes after cardiac surgery: The role of hospital quality. *JAMA Surgery* 149(3):223–227.

Rathert, C., M. D. Wyrwich, and S. A. Boren. 2013. Patient-centered care and outcomes: A systematic review of the literature. *Medical Care Research and Review* 70(4):351–379.

Regenbogen, S. E., A. A. Gawande, S. R. Lipsitz, C. C. Greenberg, and A. K. Jha. 2009. Do differences in hospital and surgeon quality explain racial disparities in lower-extremity vascular amputations? *Annals of Surgery* 250(3):424–431.

Rhoads, K. F., J. V. Ngo, Y. Ma, L. Huang, M. L. Welton, and R. A. Dudley. 2013. Do hospitals that serve a high percentage of Medicaid patients perform well on evidence-based guidelines for colon cancer care? *Journal of Health Care for the Poor and Underserved* 24(3):1180–1193.

Rosenbaum, S. 2013. *Principles to consider for the implementation of a community health needs assessment process*. http://nnphi.org/wp-content/uploads/2015/08/PrinciplesToConsiderForTheImplementationOfACHNAProcess_GWU_20130604.pdf (accessed March 10, 2016).

Ross, J. S., S. S. Cha, A. J. Epstein, Y. Wang, E. H. Bradley, J. Herrin, J. H. Lichtman, S. L. Normand, F. A. Masoudi, and H. M. Krumholz. 2007. Quality of care for acute myocardial infarction at urban safety-net hospitals. *Health Affairs* 26(1):238–248.

Ross, J. S., S. M. Bernheim, Z. Lin, E. E. Drye, J. Chen, S. L. Normand, and H. M. Krumholz. 2012. Based on key measures, care quality for Medicare enrollees at safety-net and non-safety-net hospitals was almost equal. *Health Affairs* 31(8):1739–1748.

Rothkopf, J., K. Brookler, S. Wadhwa, and M. Sajovetz. 2011. Medicaid patients seen at federally qualified health centers use hospital services less than those seen by private providers. *Health Affairs (Millwood)* 30(7):1335–1342.

RWJF (Robert Wood Johnson Foundation). 2011. *Expecting success: Excellence in cardiac care*. http://www.rwjf.org/content/dam/farm/reports/program_results_reports/2011/rwjf70497 (accessed March 7, 2016).

Sajid, S., A. A. Kotwal, and W. Dale. 2012. Interventions to improve decision making and reduce racial and ethnic disparities in the management of prostate cancer: A systematic review. *Journal of General Internal Medicine* 27(8):1068–1078.

Sandberg, S. F., C. Erikson, R. Owen, K. D. Vickery, S. T. Shimotsu, M. Linzer, N. A. Garrett, K. A. Johnsrud, D. M. Soderlund, and J. DeCubellis. 2014. Hennepin health: A safety-net accountable care organization for the expanded Medicaid population. *Health Affairs* 33(11):1975–1984.

Sarrazin, M. V., M. Campbell, and G. E. Rosenthal. 2009. Racial differences in hospital use after acute myocardial infarction: Does residential segregation play a role? *Health Affairs* 28(2):w368–w378.

Schor, E. L., J. Berenson, A. Shih, S. R. Collins, C. Schoen, P. Riley, and C. Dermody. 2011. *Ensuring equity: A post-reform framework to achieve high performance health care for vulnerable populations*. http://www.commonwealthfund.org/~/media/files/publications/fund-report/2011/oct/1547_schor_ensuring_equity_postreform_vulnerable_populations_v2.pdf (accessed February 2, 2016).

Sequist, T. D., G. M. Fitzmaurice, R. Marshall, S. Shaykevich, D. G. Safran, and J. Z. Ayanian. 2008. Physician performance and racial disparities in diabetes mellitus care. *Archives of Internal Medicine* 168(11):1145–1151.

Sequist, T. D., G. M. Fitzmaurice, R. Marshall, S. Shaykevich, A. Marston, D. G. Safran, and J. Z. Ayanian. 2010. Cultural competency training and performance reports to improve diabetes care for black patients: A cluster randomized, controlled trial. *Annals of Internal Medicine* 152(1):40–46.

Shwartz, M., A. B. Cohen, J. D. Restuccia, Z. J. Ren, A. Labonte, C. Theokary, R. Kang, and J. Horwitt. 2011. How well can we identify the high-performing hospital? *Medical Care Research and Review* 68(3):290–310.

Silow-Carroll, S., and D. Rodin. 2013. *Forging community partnerships to improve health care: The experience of four Medicaid managed care organizations*. http://www.commonwealthfund.org/publications/issue-briefs/2013/apr/forging-community-partnerships-to-improve-care (accessed February 2, 2016).

Skinner, J., A. Chandra, D. Staiger, J. Lee, and M. McClellan. 2005. Mortality after acute myocardial infarction in hospitals that disproportionately treat black patients. *Circulation* 112(17):2634–2641.

Street, R. L., Jr., K. J. O'Malley, L. A. Cooper, and P. Haidet. 2008. Understanding concordance in patient-physician relationships: Personal and ethnic dimensions of shared identity. *Annals of Family Medicine* 6(3):198–205.

Taylor, N., R. Clay-Williams, E. Hogden, J. Braithwaite, and O. Groene. 2015. High performing hospitals: A qualitative systematic review of associated factors and practical strategies for improvement. *BMC Health Services Research Journal* 15:244.

Thorlby, R., S. Jorgensen, B. Siegel, and J. Z. Ayanian. 2011. How health care organizations are using data on patients' race and ethnicity to improve quality of care. *Milbank Quarterly* 89(2):226–255.

Tsai, T. C., A. K. Jha, A. A. Gawande, R. S. Huckman, N. Bloom, and R. Sadun. 2015. Hospital board and management practices are strongly related to hospital performance on clinical quality metrics. *Health Affairs* 34(8):1304–1311.

Tyson, B. J. 2015. *Delivering health means addressing both race and place*.
    https://www.linkedin.com/pulse/delivering-health-means-addressing-both-race-place-bernard-j-
    tyson (accessed February 2, 2016).
Van Citters, A. D., K. L. Carluzzo, E. S. Fisher, K. E. Schoenherr, S. Bergquist, and V. A. Lewis. 2013.
    *Establishing a coalition to pursue accountable care in the safety net: A case study of the FQHC
    urban health network*. http://www.commonwealthfund.org/publications/case-
    studies/2013/oct/coalition-to-pursue-accountable-care-in-the-safety-net (accessed February 4,
    2016).
Van Voorhees, B. W., A. E. Walters, M. Prochaska, and M. T. Quinn. 2007. Reducing health disparities
    in depressive disorders outcomes between non-hispanic whites and ethnic minorities: A call for
    pragmatic strategies over the life course. *Medical Care Research and Review* 64(5 Suppl):157s–
    194s.
VanDeusen-Lukas, C., S. K. Holmes, E. Koppelman, M. Charns, C. Frigand, G. Gupte, and N. Neal.
    2015. *System redesign responses to challenges in safety-net systems: Summary of field study
    research*.
    http://www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/system/systemredesignsaf
    etynet/systemredesign.pdf (accessed February 2, 2016).
Wagner, E. H., B. T. Austin, and M. Von Korff. 1996. Organizing care for patients with chronic illness.
    Milbank Quarterly 74(4):511–544.
Wagner, E. H., R. Gupta, and K. Coleman. 2014. Practice transformation in the safety net medical home
    initiative: A qualitative look. *Medical Care* 52(11 Suppl 4):S18–S22.
Wakeam, E., N. D. Hevelone, R. Maine, J. Swain, S. A. Lipsitz, S. R. Finlayson, S. W. Ashley, and J. S.
    Weissman. 2014. Failure to rescue in safety-net hospitals: Availability of hospital resources and
    differences in performance. *JAMA Surgery* 149(3):229–235.
Weech-Maldonado, R., M. Elliott, R. Pradhan, C. Schiller, A. Hall, and R. D. Hays. 2012. Can hospital
    cultural competency reduce disparities in patient experiences with care? *Medical Care*
    50(Suppl):S48–S55.
Werner, R. M., L. E. Goldman, and R. A. Dudley. 2008. Comparison of change in quality of care between
    safety-net and non-safety-net hospitals. *Journal of the American Medical Association*
    299(18):2180–2187.
Woolf, S. H., and P. Braveman. 2011. Where health disparities begin: The role of social and economic
    determinants—and why current policies may make matters worse. *Health Affairs* 30(10):1852–
    1859.
Zuckerman, D., V. Duncan, and K. Parker. 2016. *Building a culture of health equity at the federal level*.
    http://nam.edu/wp-content/uploads/2016/03/Building-a-Culture-of-Health-Equity-at-the-Federal-
    Level.pdf (accessed March 10, 2016).

Appendix A

Example Implementation Strategies and Case Studies

As described in Chapters 1 and 2, the committee reviewed both the peer-reviewed and grey literature in order to identify strategies providers disproportionately serving socially at-risk populations have implemented to improve care and outcomes for their patients. As part of this effort, the committee reached out to organizations known to conduct research or represent providers disproportionately serving socially at-risk populations (Alliance of Community Health Plans, America's Essential Hospitals, America's Health Insurance Plans, and The Commonwealth Fund) who submitted 60 case studies. The committee also searched the published literature to identify additional examples. Based on a review of the case studies submitted, informed also by the literature and, in some cases, committee members' empirical research or professional experience delivering care to socially at-risk populations, the committee identified commonalities from which it concluded that six community-informed and patient-centered systems practices show promise for improving care for socially at-risk populations.

This appendix includes a series of tables that provide a selection of implementation strategies and case studies in which these strategies were identified for each of the six systems practices. Table A-1 includes examples regarding a commitment to health equity, Table A-2 includes examples of data and measurement strategies, Table A-3 has examples of components of comprehensive needs assessments, Table A-4 provides examples of collaborative partnerships, Table A-5 offers strategies for providing care continuity, and Table A-6 lists examples of engaging patients in their care. These tables aim to illustrate the range and types of activities that individual health care providers have implemented to apply each of the six systems practices. This appendix should therefore be considered a series of illustrative examples rather than a comprehensive and exhaustive list of organizations and practical strategies identified in the published and grey literature.

TABLE A-1 Commitment to Health Equity: Example Implementation Strategies and Case Studies

Example Implementation Strategy	Example Case Studies
Senior management and clinician leadership commitment to equity	HealthPartners Minnesota[a] Kaiser Permanente[b]
Integration of health equity into and communication of equity as part of common organization vision, mission, and goals	HealthPartners Minnesota[a] Kaiser Permanente[b]
Internal leaders designated responsibility for developing and overseeing a strategic plan to monitor and reduce health inequities	HealthPartners Minnesota[a]
Diverse workforce to provide culturally concordant and culturally competent care	HealthPartners Minnesota[a] Hennepin Health[c] Kaiser Permanente[b] Tucson and Southern Arizona[d]
Workforce trainings and education to improve communication with patients, including cultural competence training and hiring language interpreters	HealthPartners Minnesota[a]
Interventions to reduce inequities	HealthPartners Minnesota[a] Kaiser Permanente[b]
Identification and acknowledgment of health inequities and setting measurable goals to reduce them	HealthPartners Minnesota[a]
Expectations set and feedback provided regarding activities and practices to achieve equity	HealthPartners Minnesota[a]
Incorporation of health equity into compensation or incentives	HealthPartners Minnesota[a]
Financial and non-financial resources aligned and allocated to promote health equity	HealthPartners Minnesota[a] Kaiser Permanente[b]

SOURCES:
[a] Personal communication, Susan Knudson (HealthPartners) to Charles Baumgart (committee member), December 14, 2015.
[b] Meyers, 2008.
[c] Sandberg et al., 2014.
[d] Klein et al., 2014b.

TABLE A-2 Data and Measurement: Example Implementation Strategies and Case Studies

Example Implementation Strategy	Example Case Studies
Regular, standardized collection of social risk factor data	Denver Health[a]
Analysis and monitoring of performance data disaggregated by indicators of social risk to identify existing health disparities within organizations	HealthPartners Minnesota[b]
Enhanced risk prediction models	Denver Health[a] Montefiore Medical Center[c]

SOURCES:
[a] Hostetter and Klein, 2015.
[b] Personal communication, Susan Knudson (HealthPartners) to Charles Baumgart (committee member), December 14, 2015.
[c] McCarthy and Chase, 2010.

TABLE A-3 Comprehensive Needs Assessment: Example Implementation Strategies and Case Studies

Example Implementation Strategy	Example Case Studies
Proactive health assessment tool completed by patients	Kaiser Permanente Colorado PATHWAAY[a] Community Care of North Carolina[b]
Analysis of data from a variety of sources (including performance data, utilization data, clinical notes, patient observations, and patient-generated data)	Denver Health[c] Kaiser Permanente Colorado PATHWAAY[a]
Information-exchange portal for clinical providers, social service agencies, public health agencies, and community organizations to share information (with patient permission) about social needs	Colorado Coalition for the Homeless[d] Parkland Hospital[e]

NOTE: PATHWAAY = Proactive Assessment of Total Health and Wellness to Add Active Years.
SOURCES:
[a] ACHP, n.d.-c.
[b] Klein and McCarthy, 2009.
[c] Hostetter and Klein, 2015.
[d] Klein, 2014.
[e] Personal communication, Doug McCarthy (The Commonwealth Fund) to staff, January 12, 2016

TABLE A-4 Collaborative Partnerships: Example Implementation Strategies and Case Studies

Example Implementation Strategy	Example Case Studies
Medical neighborhoods/accountable health communities	Colorado Regional Care Collaborative Organizations[a] Hennepin Health[b] Minnesota Accountable Communities for Health[a] Oregon Coordinated Care Organizations[a]
Care teams including non-medical professionals	Citywide Colon Cancer Control Coalition[c] Hennepin Health[b] Truman Medical Center[d]
Open-access/same-day appointments for ambulatory care	The New York City Health and Hospitals Corporation[e] Alaska Native Medical Center[f] Denver Health[g]
New technologies (e.g., teleconference, videoconference, and mobile screening units) that bring clinical care to patients	Montefiore Medical Center[h] West County Health Centers[i] Community Health Centers, Inc.[j] Project ECHO[j]
Regional collaborations with other health care providers	Western New York, West Central Michigan, Southern Arizona[k] Health Share of Oregon[l] Hennepin Health[m] MetroHealth Care Plus[n]
Involvement and collaboration with social service and public health agencies and community organizations	Colorado Coalition for the Homeless[l] Hennepin Health[b] Montefiore Medical Center[h] Neighborhood Health Plan[p] UPMC *for You* Cultivating Health for Success[q] Denver Health[g]

SOURCES:
[a] Corrigan and Fisher, 2014.
[b] Sandberg et al., 2014.
[c] Itzkowitz et al., 2016.
[d] America's Essential Hospitals, 2015.
[e] McCarthy and Mueller, 2008.
[f] Murray et al., 2003.
[g] McCarthy et al., 2007.
[h] McCarthy and Chase, 2010.
[i] Hostetter and Klein, 2014.
[j] Felland et al., 2013.
[k] McCarthy et al., 2014.
[l] Klein, 2014.
[m] Hostetter and Klein, 2015.
[n] Cebul et al, 2015.
[p] Silow-Carroll and Rodin, 2013.
[q] Lovelace, 2016.

TABLE A-5 Care Continuity: Example Implementation Strategies and Case Studies

Example Implementation Strategy	Example Case Studies
Coordinated care teams	Priority Health Tandem 365[a] Kaiser Permanente Colorado PATHWAAY[b] Fallon Health NaviCare and Summit ElderCare Programs[c] Hennepin Health[d] Denver Health[e] Truman Medical Center[f]
Case management by trained clinical or lay person care coordinators/patient navigators	Geisinger Health Plan Medically Complex Medical Home[g] The New York City Health and Hospitals Corporation[h] Health Care Homes in Minnesota[i]
New technologies (teleconference, videoconference, shared data) to coordinate care between clinical and social service providers	West County Health Centers[j]
Collocating clinical, behavioral health, and social services	Priority Health Tandem 365[a] Colorado Coalition for the Homeless[k] Hennepin Health[d] Cherokee Health Systems[l] Truman Medical Center[f] Eskenazi Hospital[m]
Patient education about care transitions	Geisinger Health Plan Medically Complex Medical Home[g]

NOTE: PATHWAAY = Proactive Assessment of Total Health and Wellness to Add Active Years.
SOURCES:
[a] ACHP, n.d.-d.
[b] ACHP, n.d.-c.
[c] ACHP, n.d.-a.
[d] Sandberg et al., 2014.
[e] McCarthy et al., 2007.
[f] America's Essential Hospitals, 2015.
[g] ACHP, n.d.-b.
[h] McCarthy and Mueller, 2008.
[i] Felland et al., 2013.
[j] Hostetter and Klein, 2014.
[k] Klein, 2014.
[l] Personal communication, Doug McCarthy (The Commonwealth Fund) to staff, January 12, 2016.
[m] America's Essential Hospitals, 2014.

TABLE A-6 Engaging Patients in Their Care: Example Implementation Strategies and Case Studies

Example Implementation Strategy	Example Case Studies
Patient education about self-management, healthy behaviors, and care coordination	Genesys HealthWorks[a] Cook County Health & Hospitals System[b]
Culturally sensitive, targeted, and tailored patient education	New York City Citywide Colon Cancer Control Coalition[c] UCare (UCare Response to CMS)[d] Denver Health[e]
Tailored care plans easily understood by patients	Geisinger Health Plan Medically Complex Medical Home[f] Kaiser Permanente Colorado PATHWAAY[g]
Clinician and non-clinician patient/health navigation	Best Babies Zone[h] Genesys HealthWorks[a] New York City Citywide Colon Cancer Control Coalition[c]
New technologies (telephone consultation, videoconference, mobile screenings, smartphone apps, etc.) to promote healthy behaviors and reduce health risks	Columbus Regional[i] Genesys HealthWorks[a] West County Health Centers[i]
Reach patients through community centers, homeless shelters, religious organizations, schools	Best Babies Zone[h] Health Plan of San Mateo[j] Hennepin Health[i] Denver Health[e]

NOTE: CMS = Centers for Medicare & Medicaid Services; PATHWAAY = Proactive Assessment of Total Health and Wellness to Add Active Years.

SOURCES:

[a] Klein and McCarthy, 2010.
[b] America's Essential Hospitals, 2014.
[c] Itzkowitz et al., 2016.
[d] Personal communication, Mark Hamelburg (America's Health Insurance Plans) to Charles Baumgart (committee member), December 18, 2015.
[e] McCarthy et al., 2007.
[f] ACHP, n.d.-b.
[g] ACHP, n.d.-c.
[h] Foubister, 2013.
[i] Hostetter and Klein, 2015.
[j] Personal communication, Doug McCarthy (The Commonwealth Fund) to staff, January 12, 2016.

REFERENCES

ACHP (Alliance of Community Health Plans). n.d.-a. *Fallon Health Navicare and Summit Eldercare programs*. http://www.achp.org/wp-content/uploads/report-Innovation_ElderCare_FALLON.pdf (accessed December 14, 2015).

ACHP. n.d.-b. *Geisinger Health Plan's medically complex medical home program*. http://www.achp.org/wp-content/uploads/report-Innovation_ElderCare_GEISINGER.pdf (accessed December 14, 2015).

ACHP. n.d.-c. *Kaiser Permanente's PATHWAAY program*. http://www.achp.org/wp-content/uploads/report-Innovation_ElderCare5.8.15_KP.pdf (accessed December 14, 2015).

ACHP. n.d.-d. *Priority Health's tandem365 program*. http://www.achp.org/wp-content/uploads/report-Innovation_ElderCare_PRIORITY.pdf (accessed December 14, 2015).

America's Essential Hospitals. 2014. *Community-focused steps to boosting nutrition, wellness*. http://essentialhospitals.org/quality/community-focused-steps-to-boosting-nutrition-wellness (accessed March 18, 2016).

America's Essential Hospitals. 2015. *Improving care transitions for socially, medically complex patients*. http://essentialhospitals.org/quality/improving-care-transitions-for-socially-medically-complex-patients (accessed March 18, 2016).

Cebul, R. D., T. E. Love, D. Einstadter, A. S. Petrulis, and J. R. Corlett. 2015. Metrohealth care plus: Effects of a prepared safety net on quality of care in a Medicaid expansion population. *Health Affairs* 34(7):1121–1130.

Corrigan, J. M., and E. S. Fisher. 2014. *Accountable health communities: Insights from state health reform initiatives*. http://tdi.dartmouth.edu/images/uploads/AccountHealthComm-WhPaperFinal.pdf (accessed March 7, 2016).

Felland, L. E., A. E. Lechner, and A. Sommers. 2013. *Improving access to specialty care for Medicaid patients: Policy issues and options*. http://www.commonwealthfund.org/~/media/files/publications/fund-report/2013/jun/1691_felland_improving_access_specialty_care_medicaid_v2.pdf (accessed March 8, 2016).

Foubister, V. 2013. *Case study: Louisiana's poor rankings make improving birth outcomes a state imperative*. http://www.commonwealthfund.org/publications/newsletters/quality-matters/2013/february-march/case-study (accessed February 4, 2016).

Hostetter, M., and S. Klein. 2014. *In focus: Innovating care delivery in the safety net*. http://www.commonwealthfund.org/publications/newsletters/quality-matters/2014/december-2014-january-2015/in-focus (accessed February 2, 2016).

Hostetter, M., and S. Klein. 2015. *In focus: Segmenting populations totailor services, improve care*. http://www.commonwealthfund.org/publications/newsletters/quality-matters/2015/june/in-focus (accessed March 8, 2016).

Itzkowitz, S. H., S. J. Winawer, M. Krauskopf, M. Carlesimo, F. H. Schnoll-Sussman, K. Huang, T. K. Weber, and L. Jandorf. 2016. New York Citywide Colon Cancer Control Coalition: A public health effort to increase colon cancer screening and address health disparities. *Cancer* 122(2):269–277.

Klein, S. 2014. *Colorado Coalition for the Homeless: A model of supportive housing*. http://www.commonwealthfund.org/publications/newsletters/quality-matters/2014/october-november/case-study (accessed February 2, 2016).

Klein, S., and D. McCarthy. 2009. *North Carolina's ABCD program: Using community care networks to improve the delivery of childhood developmental screeing and referral to early intervention services*. http://www.commonwealthfund.org/publications/issue-briefs/2009/aug/north-carolinas-abcd-program-using-community-care-networks-to-improve-the-delivery (accessed March 8, 2016).

Klein, S., and D. McCarthy. 2010. *Genesys HealthWorks: Pursuing the triple aim through a primary care-based delivery system, integrated self-management support, and community partnerships*. http://www.commonwealthfund.org/publications/case-studies/2010/jul/genesys-healthworks (accessed February 2, 2016).

Klein, S., D. McCarthy, and A. Cohen. 2014a. *Health Share of Oregon: A community-oriented approach to accountable care for Medicaid beneficiaries*. http://www.commonwealthfund.org/publications/case-studies/2014/oct/health-share-oregon-aco-case-study (accessed February 2, 2016).

Klein, S., D. McCarthy, and A. Cohen. 2014b. *Tuscon and southern Arizona: A desert region pursuing better health and health system performance*. http://www.commonwealthfund.org/publications/case-studies/2014/apr/tucson-and-southern-arizona-a-desert-region-pursuing-better-health-and-health-system-performance (accessed March 8, 2016).

Lovelace, J. 2016. *Integrating health care and supported housing to improve the health and well-being of the homeless: A population health case study*. http://nam.edu/integrating-health-care-and-supported-housing-to-improve-the-health-and-well-being-of-the-homeless-a-population-health-case-report/ (accessed March 29, 2016).

McCarthy, D., and D. Chase. 2010. *Montefiore medical center: Integrated care delivery for vulnerable populations*. http://www.commonwealthfund.org/publications/case-studies/2010/oct/montefiore-medical-center (accessed March 8, 2016).

McCarthy, D., and K. Mueller. 2008. *The New York City health and hospitals corporation: Transforming a public safety net delivery system to achieve higher performance*. http://www.commonwealthfund.org/~/media/files/publications/fund-report/2008/oct/the-new-york-city-health-and-hospitals-corporation--transforming-a-public-safety-net-delivery-system/mccarthy_nychlthospitalscorpcasestudy_1154-pdf.pdf (accessed February 4, 2016).

McCarthy, D., C. Beck, R. Nuzum, and A. Gauthier. 2007. *Denver Health: A high-performance public health care system*. http://www.commonwealthfund.org/publications/fund-reports/2007/jul/denver-health--a-high-performance-public-health-care-system (accessed March 18, 2016).

McCarthy, D., S. Klein, and A. Cohen. 2014. *Opportunity for regional improvement: Three case studies of local health system performance*. http://www.commonwealthfund.org/~/media/files/publications/case-study/2014/apr/1737_mccarthy_regional_case_study_synthesis_v2.pdf (accessed March 8, 2016).

Meyers, K. 2008. *Beyond equal care: How health systems can impact racial and ethnic health disparities*. http://share.kaiserpermanente.org/media_assets/pdf/communitybenefit/assets/pdf/our_work/global/BeyondEqualCare2001_08.pdf (accessed February 2, 2016).

Murray, M., T. Bodenheimer, D. Rittenhouse, and K. Grumbach. 2003. Improving timely access to primary care: Case studies of the advanced access model. *Journal of the American Medical Association* 289(8):1042–1046.

Sandberg, S. F., C. Erikson, R. Owen, K. D. Vickery, S. T. Shimotsu, M. Linzer, N. A. Garrett, K. A. Johnsrud, D. M. Soderlund, and J. DeCubellis. 2014. Hennepin health: A safety-net accountable care organization for the expanded Medicaid population. *Health Affairs* 33(11):1975–1984.

Silow-Carroll, S., and D. Rodin. 2013. *Forging community partnerships to improve health care: The experience of four Medicaid managed care organizations*. http://www.commonwealthfund.org/publications/issue-briefs/2013/apr/forging-community-partnerships-to-improve-care (accessed February 2, 2016).

Appendix B

Committee Biosketches

Donald M. Steinwachs, Ph.D. (*Chair*), is a professor in the Department of Health Policy and Management at the Johns Hopkins Bloomberg School of Public Health. He is active in the Center for Health Services and Outcomes Research, previously named the Health Services Research and Development Center, where he served as director for many years. His research spans the design and application of health information systems for evaluation and management, development of classification systems and modeling tools, and research on the impact of organization, financing, and quality of care on outcomes for persons with chronic diseases. Dr. Steinwachs was a co-developer of the widely used ACG (Adjusted Clinical Groups) case-mix adjustment and co-developer of the Johns Hopkins HaH (Hospital at Home). He developed methods for measuring provider continuity, needs and unmet needs for care, and measures of the timeliness of care. He was president of the Association for Health Services Research (now AcademyHealth) and received the 2013 Distinguished Research Award from AcademyHealth. He currently serves on the National Research Advisory Council of the U.S. Department of Veterans Affairs. He served on numerous committees of the National Academies of Sciences, Engineering, and Medicine, including the Board on Health Care Services and the Institute of Medicine Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. He holds a Ph.D. from Johns Hopkins University and is an elected member of the National Academy of Medicine.

John Z. Ayanian, M.D., M.P.P., is director of the Institute for Healthcare Policy and Innovation, the Alice Hamilton Professor of Medicine at the School of Medicine, professor of health management and policy at the School of Public Health, and professor of public policy at the Ford School of Public Policy, all at the University of Michigan. He also serves as associate editor of the *New England Journal of Medicine*. Dr. Ayanian has focused his career on health policy and health services research related to access to care, quality of care, and health care disparities, and has served in key health policy advisory roles to state and federal government. Prior to joining the University of Michigan, Dr. Ayanian was a professor at the Harvard Medical School and at the Harvard School of Public Health, and a practicing primary care physician at Brigham and Women's Hospital in Boston. At Harvard, Dr. Ayanian also directed the Health Disparities Research Program of Harvard Catalyst, Harvard's Clinical and Translational Sciences Center; the Outcomes Research Program of the Dana-Farber/Harvard Cancer Center; and the Harvard Medical School Fellowship in General Medicine and Primary Care. In addition to his

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medical degree from Harvard Medical School, he holds an M.P.P. from Harvard's John F. Kennedy School of Government. He is an elected member of the National Academy of Medicine.

Charles Baumgart, M.D., is senior medical director at xG Health Solutions, an organization that was spun out of Geisinger Health System, designed to partner with health care organizations nationally to bring Geisinger population health management expertise to local health care improvement efforts. He has worked with numerous health care systems, both academic and community-based, as well as with managed care organizations. He has most recently been the xG Health clinical/physician lead for support of a New York Delivery System Reform Incentive Payment program site, the Suffolk County Care Collaborative (Stony Brook University Hospital). Before joining xG Health Solutions, Dr. Baumgart was the Geisinger Health Plan senior medical director for government programs. His responsibilities included the development of the clinical management program for a new Managed Medicaid program in northeast Pennsylvania, leveraging Geisinger's existing Advanced Medical Home model. In his role, he worked with all aspects of population and quality management, including support of medical home development, analytics, and provider pay-for-performance programs. Dr. Baumgart previously served as a senior medical director and then the vice president and chief medical officer for Presbyterian Health Plan in Albuquerque, New Mexico. Dr. Baumgart graduated with an M.D. from the University of Iowa. Dr. Baumgart is board certified in internal medicine and quality assurance and utilization review. He has participated in the advanced training program in health care delivery improvement with Intermountain Healthcare, is a certified managed care executive through America's Health Insurance Plans, and served as a senior examiner with the Malcolm Baldrige National Quality Award Program.

Melinda Buntin, Ph.D., is professor and chair of the Department of Health Policy at Vanderbilt University's School of Medicine. She previously served as deputy assistant director for health at the Congressional Budget Office (CBO), where she was responsible for managing and directing studies of health care and health care financing issues in the Health, Retirement, and Long-term Analysis Division. Prior to joining CBO, Dr. Buntin worked at the Office of the National Coordinator for Health Information Technology, where she established and directed the economic analysis, evaluation, and modeling group, while on leave from RAND Corporation. At RAND, Dr. Buntin served as deputy director of RAND Health's Economics, Financing, and Organization Program, director of Public Sector Initiatives for RAND Health, and co-director of the Bing Center for Health Economics. Her research at RAND focused on insurance benefit design, health insurance markets, provider payment, and the care use and needs of the elderly. She has a Ph.D. in health policy with a concentration in economics from Harvard University. Dr. Buntin is a member of the National Academies of Sciences, Engineering, and Medicine's Board on Health Care Services.

Ana V. Diez Roux, M.D., Ph.D., M.P.H., is Distinguished University Professor of Epidemiology and dean of the Drexel University Dornsife School of Public Health. Before joining Drexel University, she served on the faculties of Columbia University and the University of Michigan, where she was chair of the Department of Epidemiology and director of the Center for Social Epidemiology and Population Health at the University of Michigan School of Public Health. Dr. Diez Roux is internationally known for her research on the social determinants of

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Marc N. Elliott, Ph.D., is a senior principal researcher and holds the Distinguished Chair in Statistics at the RAND Corporation. His areas of interest include health disparities, Medicare, vulnerable populations, experiences with health care, profiling of health care institutions, survey sampling, experimental design, causal inference, and case-mix adjustment. He has developed Bayesian methods of estimating race/ethnicity and associated disparities using surname and address information. Dr. Elliott led an Office of Minority Health project, developing novel, cost-effective sampling and analytic methods to improve national health estimates for small racial/ethnic subgroups. Since 2006, he has led the Centers for Medicare & Medicaid Services Medicare CAHPS (Consumer Assessment of Health Providers and Systems) Analysis project. Since 1996, he has been RAND's lead statistician on the Agency for Healthcare Research and Quality (AHRQ) CAHPS I-III projects and currently co-leads the AHRQ CAHPS IV project. Dr. Elliott was recognized by Thomas Reuters as being one of the Top 1 percent of Cited Scientists 2002-2012. Dr. Elliott is a fellow of the American Statistical Association. He earned his Ph.D. in statistics from Rice University.

José J. Escarce, M.D., Ph.D., is a professor of medicine in the David Geffen School of Medicine at the University of California, Los Angeles (UCLA), and a professor of health policy and management in the UCLA Fielding School of Public Health. His research interests and expertise include health economics, managed care, physician behavior, racial/ethnic and socioeconomic disparities in health care, technological change in medicine, and access, costs, and quality of care. Dr. Escarce is currently working on projects that address sociodemographic barriers to access, vertical integration between acute and post-acute care, bundled payments, and the effects of financial and non-financial incentives on costs and quality in provider groups and health systems. He holds an M.D. from the University of Pennsylvania School of Medicine and a Ph.D. from the Wharton School. Dr. Escarce is an elected member of the National Academy of Medicine and was a member of the Institute of Medicine Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care and of the Board on Population Health and Public Health Practice.

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Prevention to Work grant from the Centers for Disease Control and Prevention and is now vice-chair of the Bexar County Health Collaborative. He has also been a member of the Expert Panel for the Agency for Healthcare Research and Quality Innovations Exchange. Dr. Ferrer holds an M.D. from Hahnemann University School of Medicine and an M.P.H. from the University of Washington.

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Mark D. Hayward, Ph.D., is Centennial Commission Professor in the Liberal Arts and professor of sociology at the University of Texas at Austin. From 2005 to 2015, he was director of the university's Population Research Center. His primary research addresses how life course exposures and events influence the morbidity and mortality experiences of the adult population. Recent studies have clarified how early life conditions and especially educational experience influence socioeconomic, race, and gender disparities in adult morbidity and mortality; the demography of race/ethnic and gender disparities in healthy life expectancy; social inequality in the biomarkers of aging; and the health consequences of marriage, divorce, and widowhood. He recently served as the president of the Southern Demographic Association and chair of the Aging and Life Course section of the American Sociological Association. He has served on the boards of the Population Association of America and the Society of Biodemography and Social Biology, and he was a member and then chair of the Inter-University Consortium for Political and Social Research Council. Currently, he is a member of the National Advisory Committee for the Robert Wood Johnson Foundation's Health and Society Scholars Program. He served on the National Research Council (NRC) Committee on Population and the NRC Panel on New Directions in Social Demography, Social Epidemiology, and the Sociology of Aging. Dr. Hayward received his Ph.D. in sociology from Indiana University.

James S. Jackson, Ph.D., is the past director of the Institute for Social Research and the Daniel Katz Distinguished University Professor of Psychology at the University of Michigan. He has previously held positions as chair of the Social Psychology Training Program and director of the Research Center for Group Dynamics, the Program for Research on Black Americans, and the Center for Afroamerican and African Studies, all at the University of Michigan. His research

focuses on issues of racial and ethnic influences on life course development, attitude change, reciprocity, social support, and coping and health among African Americans. His research efforts include carrying out a number of national and international surveys of black populations. Dr. Jackson is a fellow of the American Academy of Arts and Sciences and the American Academy of Political and Social Science, and was appointed to the National Science Board of the United States by President Obama in 2014. He has served on several committees of the National Academies of Sciences, Engineering, and Medicine, including currently on the Board on the Health of Select Populations of the Institute of Medicine, and on the Board on Behavioral, Cognitive, and Sensory Sciences, Standing Committee on Integrating New Behavioral Health Measures into the Substance Abuse and Mental Health Services Administration's Data Collection Programs (as chair), and Roundtable on the Application of Social and Behavioral Science Research of the Division of Behavioral and Social Sciences and Education. Dr. Jackson holds a Ph.D. in social psychology from Wayne State University and is an elected member of the National Academy of Medicine.

Daniel Polsky, Ph.D., is the executive director of the Leonard Davis Institute of Health Economics, Professor of Medicine in the Perelman School of Medicine, and the Robert D. Eilers Professor of Health Care Management in the Wharton School at the University of Pennsylvania. His research areas include access to health care, provider payment, disparities, and economic evaluation of medical and behavioral health interventions. He serves on the Congressional Budget Office's Panel of Health Advisers and the National Academies of Sciences, Engineering, and Medicine's Board on Population Health and Public Health Practice. He was the senior economist on health issues at the President's Council of Economic Advisers in 2007–2008. He received a Ph.D. in Economics from the University of Pennsylvania and a master of public policy from the University of Michigan.

Meredith Rosenthal, Ph.D., is professor of health economics and policy and the associate dean of diversity at the Harvard T.H. Chan School of Public Health. She is a member of the Massachusetts Public Health Council and an elected board chair of the Massachusetts Health Quality Partners. Dr. Rosenthal's research focuses primarily on policies that will help slow the growth in health care spending. These efforts include changes in payment incentives, benefit design, and the provision of information and behavioral "nudges" to both patients and providers. Her research has influenced the design of provider payment systems in both the public and private sectors. She has advised federal and state policy makers in health care payment policy and implementation, and has also testified in congressional hearings on pay-for-performance and in legislative hearings in California and Massachusetts concerning health care provider payment and benefit design policies. Dr. Rosenthal earned her Ph.D. in health policy (economics track) at Harvard. She is an elected member of the National Academy of Medicine.

Anthony Shih, M.D., M.P.H., is executive vice president of The New York Academy of Medicine (NYAM). Established in 1847, NYAM advances solutions that promote the health and well-being of people in cities worldwide. Dr. Shih's expertise is in health care policy, urban health, health system performance measurement, health care quality improvement, and health care philanthropy. Prior to joining NYAM, Dr. Shih served as The Commonwealth Fund's executive vice president for programs, overseeing all of the fund's program and research activities, which were focused on improving the U.S. health care system. Previously, Dr. Shih

held several senior management roles, including chief quality officer and vice president of strategy at IPRO, a leading independent, not-for-profit health care quality improvement organization. At IPRO, he developed and managed large-scale quality assessment and improvement projects for Medicare and Medicaid populations, as well as led IPRO's Health Care Transparency Group. Earlier in his career, Dr. Shih was assistant medical director for a community-based mental health organization serving immigrant and refugee populations in Oakland, California. Board-certified in preventive medicine, Dr. Shih received his M.D. from the New York University School of Medicine and his M.P.H. from the Columbia University Mailman School of Public Health.