BACKGROUND PAPER

BY TIM LYNCH

In recent years, there has been increasing focus on the degree to which health outcomes are influenced by social and environmental factors that are far removed from the hospital and exam room. Experts view these social determinants of health—for example, income, safe housing, access to healthy food and reliable transportation options—as equal to or, in some cases, more important than clinical care in determining health.[1] They have argued that while more than 95 percent of the funds spent on health care in the United States go to paying direct medical services, 60 percent of preventable deaths are rooted in modifiable behaviors and exposures that occur in the community.[2]

Although these social and environmental factors fall outside the traditional purview of health care institutions, changes in how health care is financed and regulated have created incentives for physicians and the systems in which they work to pay attention to them. For example, the growth of the accountable care organization (ACO) model—with its animating principle of evaluating health care organizations based on the health outcomes of the populations they serve—and bundled payment programs have given a growing number of institutions concrete reasons to attend to the social and environmental contexts in which their patients are living. Broader programs such as the Hospital Readmissions Reduction Program, which penalizes hospitals based on their number of readmissions within 30 days of discharge, give all systems receiving Medicare payments a substantial incentive to focus on the supports available within their communities.

In addition to focusing on the social factors shaping their patients' health, health care institutions have also demonstrated an increased focus on providing care outside their walls. Through telemedicine, virtual visits and "hospital at home" programs, these systems are breaking down traditional barriers that limited the ability of some patients to receive the most appropriate care for them, or to receive care at all.

The growing awareness of the impact of social determinants on health and the recognition that the best patient care can include options for community-delivered care are also clearly relevant to how physicians conceive of their professional obligations. Taken collectively, the efforts that will be described in this paper—helping patients obtain a place to live or healthy food, or provide more and better ways for them to access care in their homes—represent meaningful opportunities for physicians to fulfill their professional responsibilities. Indeed, the programs discussed in this paper show physicians providing care in ways that meet one or more of the three fundamental principles of professionalism defined in the Physician Charter: patient welfare, patient autonomy, and social justice.[3]

Unsurprisingly, this shift in approach carries challenges for both systems and physicians. Many of these challenges involve payment. Although the financing and regulatory changes referenced above are gradually changing incentives, the "business case" for a health system providing social supports such as housing—or individual physicians providing remote services—is often quite unclear. Payers can be slow to accept new models of delivery care, impeding experimentation. There are also workload challenges for physicians asked to provide care in new ways, and administrative challenges for health systems that have been used to operating in more traditional ways.

This paper will highlight these challenges alongside the many opportunities demonstrated by stories of how health care organizations are reaching beyond their walls to influence the health of their communities and co-create care. We hope that it provides useful context for discussions at the Forum.

1 Going beyond clinical walls: solving complex problems. Institute for Clinical Systems Improvement, Robert Wood Johnson Foundation, 2014 Oct. 2 p [cited 2017 Apr 24]. Available from https://www.icsi.org/_asset/w6zn9x/solvcomplexproblems.pdf.

2 McGinnis JM, Williams-Russo P, Knickman JP. The case for more active policy attention to health promotion. Health Aff. 2002 Mar-Apr;21(2):78-93. [cited 2017 Apr 26]. Available from: http://content.healthaffairs.org/content/21/2/78.full.pdf+html.

3 ABIM Foundation, American College of Physicians, European Federation of Internal Medicine. The physician charter [pamphlet]. Philadelphia: 2002. Available from: http://abimfoundation.org/what-we-do/physician-charter.

BACKGROUND

Major efforts to improve health at the community level have been under way for some time, including efforts sponsored by the U.S. government (e.g., decennial Healthy People campaigns led by the Department of Health and Human Services, the Centers for Disease Control and Prevention's Healthy Communities program) and private funders (e.g., the Robert Wood Johnson Foundation's Aligning Forces for Quality program, which focused on improving the quality of health care in 16 American communities). In recent years, however, new efforts have focused more squarely on enlisting health systems as providers and/or funders of community services.

In 2014, the Institute for Healthcare Improvement (IHI) launched its 100 Million Healthier Lives campaign, a worldwide effort with the mission of having 100 million people living healthier lives by 2020. The effort crosses sectors and nations and includes many health care systems as partners. It focuses heavily on the social determinants of health, with core strategies that include building bridges between health care, community, public health and social service systems and creating healthy communities.[4]

Domestically, the U.S. government has sought to encourage health care systems to work outside their walls to pursue improved health outcomes through the Accountable Health Care Communities (AHC) model. The AHC program is designed to "address a critical gap between clinical care and community services in the current delivery system."[5] Through screening of Medicare and Medicaid beneficiaries who access care at participating clinical delivery sites, the model aims to address patient needs in housing instability and quality, food insecurity, utility needs, interpersonal violence and transportation.

Over a five-year period, participants will move through three tracks. In the first track, they will increase beneficiary awareness of available community services; in the second, they will help patients access those services; and in the third, they will encourage partner alignment to ensure that community services are available and responsive to the needs of beneficiaries. According to the Centers for Medicare & Medicaid Services (CMS), which operates the program, the model will "test whether increased awareness of and access to services addressing health-related social needs will impact total health care costs and improve health and quality of care" for beneficiaries.[5]

HEALTH SYSTEM ACTIVITY

While these comprehensive efforts are being launched, many health systems are working on discrete projects designed to address one or more specific social or environmental needs, or to deliver direct care outside of their clinical settings. We can think of the former projects as focusing on the "upstream" portion of the care continuum, seeking to prevent health problems before they arise; and the latter as focusing on the "downstream," delivering care in ways that are more effective and patient-centered. Most of these efforts are in their early stages and offer potential roadmaps for health care organizations. Additional stories will be highlighted through innovator presentations at the Forum.

4 Stiefel MC, Riley CL, Roy B, Ramaswamy R, Stout S. 100 Million Healthier Lives measurement system: progress to date [Internet]. Cambridge (MA): Institute for Healthcare Improvement; 2014 Mar. 41 p [cited 2017 Apr 27]. Available from: http://www.100mlives.org/wp-content/uploads/2016/03/FINAL_100MHL-Measurement-Framework-Report_2016-03-17.pdf.

5 Accountable Health Communities (AHC) Model Fact Sheet [Internet]. Baltimore (MD): Centers for Medicare & Medicaid Services; 2016 Jan. 5 [cited 2017 Apr 25]. Available from: https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2016-Fact-sheets-items/2016-01-05.html

HIGH UTILIZERS

Some health care organizations have focused efforts on "high utilizers" who return regularly for care. Under the leadership of Nirav Shah, MD, who will deliver this year's Kimball Lecture, Kaiser Permanente–Southern California (KP-SC) partnered with Health Leads, a social enterprise organization that aims "to address all patients' basic resource needs as a standard part of quality care," to focus on the full gamut of needs of the system's highest utilizers.[6] Through this effort, Dr. Shah wrote, KP-SC is "taking on the responsibility for the full scope of our patients' needs, consistent with our social mission and business imperative to improve the health of the communities we serve."

Using a dedicated call center, representatives contact patients whom KP-SC identifies as at highest risk of becoming "super-utilizers" to ask them about their unmet social needs. As of spring 2016, more than three-quarters of those called had at least one unmet need, and 74 percent of that group agreed to enroll in the Health Leads program, which connects them with community resources such as food banks and KP-SC resources such as member financial assistance. Enrolled members are then called every 10–14 days; representatives offer additional assistance connecting with resources and assess how well their needs are being addressed.

KP-SC is evaluating which community resources are providing the greatest benefit for its members so that it can offer the most effective referrals. It is also assessing the quality of in-person assessments of social needs in various care settings (e.g., ambulatory clinics, home health care, inpatient units) and the impact of clinicians' identifying needs and referring patients to the call center.

In an attempt to address the comprehensive needs of its high utilizers, Hennepin County in Minnesota (which contains the city of Minneapolis) created Hennepin Health, whose Population Health Program Director Amy Harris-Overby will present at the Forum. Hennepin Health is a full–risk-bearing managed care plan designed to serve the county's Medicaid expansion population, which includes a significant percentage of single adult men with chronic medical and behavioral issues and little social support. Among other things, it provides housing and social services navigation, employment counseling, targeted case management and food assistance. After one year of the program, emergency department visits fell 9.1 percent and inpatient admissions declined by 3 percent.[7]

6 Shah NR, Rogers AJ, Kanter MH. Health care that targets unmet social needs [Internet]. Waltham (MA): NEJM Catalyst. 2016 Apr 13 [cited 2017 Apr 25]. Available from: http://catalyst.nejm.org/health-care-that-targets-unmet-social-needs/.

7 DeCubellis J, Owen R. Hennepin County Hennepin Health [Internet]. Hennepin County (MN): Hennepin Health. 2014 Jun [cited 2017 Apr 25]. 20 p. Available from: http://www.healthreform.ct.gov/ohri/lib/ohri/1._hennepin-county-medical-center.pdf.

HOUSING

Like their peers across the country, clinicians at the University of Illinois Hospital in Chicago (UI Health) saw homeless individuals return repeatedly to the emergency room seeking treatment for conditions that should be manageable if they had access to regular care. One such patient, Glenn Baker, told National Public Radio that during one recent winter, he spent 20 nights a month at different hospitals in the city.[8]

In response, UI Health invested $250,000 in Better Health Through Housing, a demonstration program that has provided apartments for 27 chronically homeless patients along with a case manager who helps them manage their care, including scheduling appointments for outpatient care. The hospital contributes $1,000 per patient per month, and patients are prioritized based on chronic homelessness and medical necessity—the degree to which their health conditions are worsened by a lack of housing.[9] A team of clinicians and the case manager meet every two weeks to discuss each patient's care.

The program is based on the Housing First model—under which homeless adults receive housing without being required first to stop using drugs and alcohol—and is operated in partnership with Chicago's Center for Housing and Health. The logic behind the UI Health program is intuitive. "The home is the base from which people maintain their health," UIC CEO Avijit Ghosh told the *Chicago Tribune*.[10] "Without a home base where you can get a good night's sleep, stay out of the weather, keep your food and prepare your meals, how are you supposed to stay healthy?"

The initiative achieved solid results in its first year. In addition to the alleviation of homelessness for the patients, the in-system costs for the 27 patients declined by 40 percent. Stephen Brown, the associate director of preventive emergency medicine at UI Health, said that there were significant reductions in emergency department and inpatient utilization, and modest decreases in outpatient utilization.[11]

Despite these positive initial results, the program's future is unclear. Brown said that after funding the initial round itself, UI Health is seeking funding from private foundations and community organizations to maintain its program, and that a number of managed care organizations and other health care providers have expressed interest in adopting similar efforts. Three hospitals—Rush University Medical Center, Cook County Hospital and Swedish Covenant—are starting similar models. "The program is helping to spur a conversation in Chicago about whether hospitals can rethink their role," Brown said.

In the short term, however, hospitals face challenging incentives. "The financial benefits [of continuing the program] are not that clear under fee for service," Brown said. "With risk-based models, there's more of an incentive." Brown did suggest that operating supportive housing programs could appeal to nonprofit hospitals, which must demonstrate how they are benefiting the community. The Internal Revenue Service announced in December 2015 that investments in clean and safe housing constitute community benefit expenditures.[12]

8 Bryan M. A hospital offers frequent ER patients an out – free housing [Internet]. Washington (DC): NPR; 2016 Jun 29[cited 2017 Apr 26]. Available from: http://www.npr.org/sections/health-shots/2016/06/29/482994000/a-hospital-offers-frequent-er-patients-an-out-free-housing

9 Butcher L. Why hospitals are housing the homeless. Hospital and Health Networks [Internet]. 2017 Jan 5 [cited 2017 Apr 26]. Available from: http://www.hhnmag.com/articles/7818-why-hospitals-are-housing-the-homeless

10 Cavanaugh R. Chicago hospital tries to improve health of ER 'super-utilizers' – with housing. Chicago Tribune [Internet]. 2016 2 Sept [cited 2017 Apr 26]. Available from: http://www.chicagotribune.com/lifestyles/health/sc-hospital-homeless-patients-health-0914-20160902-story.html

11 Lynch Timothy (Senior Director of Foundation Programs, ABIM Foundation, Philadelphia, PA). Interview with Stephen Brown (Associate Director of Preventive Emergency Medicine, UI Health, Chicago, IL). 2017 Jan 30.

12 Butcher L. American Hospital Association: housing is health care [Internet]. Washington (DC): Hospital and Health Networks; 2017 Jan 5 [cited 2017 Apr 26]. Available from http://www.hhnmag.com/articles/7821-housing-is-health-care

The UI Health program is an example of a broader trend. For example, the Camden Coalition of Healthcare Providers has launched a similar program in southern New Jersey. Its Housing First project will house 50 individuals who will also receive aid in managing their health conditions. Patients selected for the program must have been hospitalized at least twice in the previous six months, have two or more chronic conditions and be homeless or unstably housed.[13] Similar programs have found success in Seattle and Boston.[14]

In addition, Los Angeles County's Department of Health Services, whose director, Mitchell Katz, MD, will present at the Forum, operates the Housing for Health program, which provides permanent supportive housing, recuperative care, and specialized primary care to homeless people with complex physical and behavioral health conditions.

According to researchers at the Yale School of Public Health who performed a literature review on the subject, "The evidence demonstrating a direct relationship between housing interventions and health outcomes within low-income and otherwise vulnerable populations is expansive."[14] They also reported that for the Housing First model in particular, net savings in health care costs can range from $9,000–$30,000, with some studies concluding that the medical savings offset the cost of the housing.[15] Others have been more skeptical about the financial benefits, however, concluding that although the Housing First concept has been shown to be effective in reducing homelessness, it has not yet demonstrated net cost savings in randomized, controlled trials.[16]

Other health systems have launched housing efforts that go beyond sheltering the homeless. Bon Secours Health System in West Baltimore leads a multi-faceted effort to build healthy communities in its neighborhood, including economic development, housing, career and youth employment, and financial services. It has developed and now owns and operates more than 720 apartment units for low- and moderate-income seniors, families and people with disabilities. Bon Secours started purchasing properties in the 1990s to counter disinvestment from the neighborhood, which made it difficult to attract patients and staff. It now has a department devoted to housing and community development, which works to secure financing, oversee construction and supervise the companies that handle leasing and property management. Its housing operations are designed to break even.[10]

SBH Health System in the Bronx is now seeking to emulate what Bon Secours has done in West Baltimore, with a plan to build 314 homes for low-income residents.[10] Fifty of the units will be managed by BronxWorks, a housing agency that will provide case management, employment training and counseling to residents.[17]

13 Camden coalition launches housing first program [Internet]. Camden (NJ): Camden Coalition of Healthcare Providers. 2015 Nov 23 [cited 2017 Apr 26]. Camden, NJ. Available from: https://www.camdenhealth.org/camden-coalition-launches-housing-first-south-jersey/

14 Taylor LA, Tan AX, Coyle CE, Ndumele C, Rogan E, Canavan M, Curry LA, Bradley EH. Leveraging the social determinants of health: what works? PLoS One. 2016 Aug 17;11(8):e0160217.

15 Taylor LA, Coyle CE, Ndumele C, Rogan E, Canavan M, Curry L, Bradley EH. Leveraging the social determinants of health: what works? Executive summary. [Internet]. Blue Cross Blue Shield of Massachusetts Foundation. 7p. 2015 June [cited 2017 March 23]. Available from: https://bluecrossfoundation.org/sites/default/files/download/publication/Social_Equity_ExecSumm_final.pdf

16 Kertesz SG, Baggett TP, O'Connell JJ, Buck DS, Kushel, MG. Permanent supportive housing for homeless people—reframing the debate. N Engl J Med. 2016 Dec 1;375(22):2115-7.

17 Rege A. SBH health system to help build affordable housing for low-income NY residents [Internet]. Becker's Hospital Review; 2016 Jul 11 [cited 2017 Apr 27]. Available from: http://www.beckershospitalreview.com/population-health/sbh-health-system-to-help-build-affordable-housing-for-low-income-ny-residents.html.

FOOD INSECURITY

A lack of healthy food can create health problems such as malnutrition or obesity and exacerbate existing ones, such as diabetes. There is a solid evidence base showing that nutritional assistance for particular populations (women, infants and children; older adults) can improve health care outcomes and reduce health care costs.[15] Of course, to take advantage of this assistance, individuals have to be aware that they are eligible and take affirmative steps to receive benefits. Kaiser Permanente Colorado (KP-Colorado) is among the health care organizations trying to ensure that its patients are able to benefit from public and private sources of assistance.

Colorado typically ranks at or near the bottom of U.S. states in the percentage of its eligible residents who participate in the federal Supplemental Nutrition Assistance Program.[18] Seeing the consequences of poor nutrition on patients, KP-Colorado, which cares for more than 600,000 members, partnered in 2011 with Hunger Free Colorado (HFC), a statewide hunger advocacy and outreach organization, to implement a comprehensive hunger-screening program. The partners shared the goals of decreasing diet-related diseases and increasing access to nutritious food.[18]

"Of all the social determinants of health, food security has the most direct connection with medicine," said Sandra Stenmark, MD, a pediatrician and the physician director of KP-Colorado's Clinic to Community Integration. "We frequently see diet-related diseases such as obesity and diabetes, as well as nutritional deficiencies and even malnutrition. In addition to dietary counseling, we need to ask our patients whether or not they are able to afford nutritious food. We also need to prevent or treat chronic diseases by asking about food insecurity, especially in pregnancy and early childhood, when lack of adequate nutrition can have lifelong health impacts."[19]

Under the program, patients are asked two screening questions during clinical visits: (1) if in the previous year they had worried they would run out of food before having the money to buy more; and (2) if that in fact had happened. Patients who screen positively for food insecurity are given a card with HFC's phone number and instructed to call. HFC then determines patients' eligibility for food assistance, educates them about their options and completes applications on their behalf for federal nutrition programs.

Initially, fewer than 5 percent of referred patients called the hotline. At that point, program staff developed a referral form that was incorporated into the electronic medical record, enabling patients to sign a form to authorize HFC to contact them directly. The questions were also revised to ask about hunger in the past three months, rather than a year, to identify patients with more current needs. After these changes, the proportion of referred patients connecting to the hotline rose to 78 percent.[18]

18 Stenmark S, Solomon L, Allen-Davis J, Brozena C. Linking the clinical experience to community resources to address hunger in Colorado [Internet]. Bethesda (MD): Health Affairs Blog; 2015 Jul 13 [cited 2017 Apr 27]. Available from: http://healthaffairs.org/blog/2015/07/13/linking-the-clinical-experience-to-community-resources-to-address-hunger-in-colorado/.

19 Lynch Timothy (Senior Director of Foundation Programs, ABIM Foundation, Philadelphia, PA). Interview with Sandra Stenmark, MD (physician director of KP-Colorado's Clinic to Community Integration), 2017 Jan 31

"I have patients from five counties," Dr. Stenmark said. "It is exceedingly difficult to keep track of resources in five counties. With this program, I just have to connect patients to HFC, and then they facilitate enrollment in government nutrition assistance programs, as well as connect patients to other local food resources such as Meals on Wheels and local food pantries."

Since the program launched in 2011, it has expanded from two pediatric clinics to 10 departments and more than 10 medical offices at KP-Colorado. In 2016, 18,569 individuals were referred to HFC, including 5–6 percent of the Medicare population.[19] This success required overcoming hurdles, including clinicians' "considerable skepticism about the appropriateness of taking up valuable and scarce clinical time."[19] Dr. Stenmark attributed this initial skepticism to a few factors. First, she said many physicians were unaware of the prevalence and health impacts of food insecurity. Second, she described communications challenges for clinicians, who "because of their training did not have the skills to normalize questions about food insecurity and ask patients whether they want to be connected to food resources."

Dr. Stenmark said success requires continuous collaboration, monitoring and improvement. For example, KP-Colorado receives data from HFC each month about the number of referred patients with whom it has connected. When the connection rate dropped, KP-Colorado began asking patients for permission for HFC to contact them by text, which brought the rate back up.

Her colleagues are now trying to catalyze adoption of measures to combat food insecurity statewide. KP-Colorado has made grants to smaller medical systems and social service providers, and its clinicians are participating in a learning network to share information about the program.

Other health care organizations are engaged in similar work. For example, ProMedica, a health system in northwest Ohio and southeast Michigan, has implemented universal screening of patients for food insecurity, and patients who are identified as "food insecure" are provided several days' worth of healthy foods for their households that are aligned with any relevant diagnosis (such as diabetes or heart disease), along with free nutrition counseling, educational materials and information on community resources.[20] The Bronx Community Health Network's "Racial and Ethnic Approaches to Community Health" (REACH) program includes a Shop Healthy initiative that works with food retailers, suppliers and distributors to increase access to healthy foods.[21]

20 Calhoun H, Barnett K. Making food systems part of your community health needs assessment" [Internet]. Oakland (CA): Public Health Institute. 2016 Jul 37 p. [cited 2017 27 Apr]. Available from: http://www.phi.org/resources/?resource=making-food-systems-part-of-your-community-health-needs-assessment; https://www.phi.org/uploads/application/files/l5gi3yetjrz6genaw13ppu92u9flcbspm1wgzqc6u9llvsb888.pdf.

21 Bronx REACH CHAMPS initiatives [Internet]. Bronx (NY): Bronx Community Health Network, Inc. 2016 [cited 2017 Apr 27]. Available from: http://www.bchnhealth.org/community-programs.html.

CARING FOR PATIENTS WHERE THEY ARE: VIRTUAL VISITS

In addition to attempting to address social and environmental factors that affect their patients' health, health care organizations are also taking advantage of modern technology to enable virtual interactions between patients and clinicians. The market for "telemedicine" is projected to grow from $240 million in 2013 to $1.9 billion by next year, according to data and analytics firm HIS, and adopters include Community Health Systems, the Cleveland Clinic and Intermountain Healthcare.[22]

One leader in this area is Brigham and Women's Hospital (BWH) in Boston, which is employing virtual care in three major ways. The first, begun in 2015, is through virtual visits for outpatients with chronic diseases. The target audience for the program is patients who required frequent follow-up visits but infrequent physical exams and who had difficulty coming into the office.[23] BWH placed cameras in exam rooms and clinicians' offices and trained clinicians how to use a secure video platform to connect with patients remotely. Clinicians were paid at a rate "roughly commensurate with routine office-based billing, regardless of payer mix."[23]

Through the first 600 visits, patient reaction has been strongly positive, with 97 percent saying they were satisfied with the experience and would recommend the program, and 74 percent feeling that the interaction improved their relationship with their provider.

BWH believes the program can achieve a number of important goals as it grows, including improving no-show rates, increasing patient engagement with their clinicians, saving patients time away from home and work, improving quality, preventing hospital admissions and readmissions, and enabling clinicians to adopt more flexible schedules as they gain the option to provide care virtually.

The second virtual-care pilot BWH adopted was a program for patients with common, acute symptoms requiring rapid triage and management. A large group of stakeholders collaborated to develop a set of short algorithmic questionnaires covering the most common primary care complaints, such as cough, red eye, urinary symptoms and back pain. BWH then added the questionnaires to its patient portal and encouraged patients to fill them out. The completed questionnaires were delivered to clinicians, who could then order medications or tests. Clinicians were compensated at about half the rate paid for video visits.

The third virtual care pilot does not involve patients directly. In this "e-consult" program, specialists answer clinical questions from other providers, usually primary care physicians. In the course of a year, about 300 clinicians used the program to send nearly 2,000 questions to specialists. The questions often relate to whether patients need referrals or choices about particular care options, such as which medication would be most effective. A chart review found that the "e-consult" program reduced referrals by 50 percent, reducing costs and increasing specialist capacity.

22 Kutscher B. Major-player health systems want to broaden telehealth's bandwidth Chicago (IL): Modern Healthcare; 2015 Dec 5 [cited 2017 Apr 27]. Available from http://www.modernhealthcare.com/article/20151205/MAGAZINE/312059962

23 Licurse A. One hospital's experiments in virtual health care [Internet]. Cambridge (MA): Harvard Business Review; 2016 Dec 9 [cited 2017 Apr 27]. Available from: https://hbr.org/2016/12/one-hospitals-experiments-in-virtual-health-care.

Clinician and practice adoption of these new efforts was initially slow, according to Adam Licurse, MD, who has led the effort. “Like so many pilots, a central tension we face in care redesign is the challenge of doing something new in practices that are already saturated with their current work,” Dr. Licurse said. “But we knew it was a balance we could strike, as we heard every day how interested clinicians were in offering these programs, and how important it was to get this right. Patients are demanding that we be available for advice and consultation. We need new ways of meeting patients where they are.”[24]

Dr. Licurse described a variety of challenges to implementing the programs. Some were technological: integrating the pilots and the EMR system, finding a high-quality telehealth vendor, and having the process be seamless for patients and providers. “It takes resources and expertise that could be prohibitive for smaller practices and systems,” he said.

There were also clinical challenges in determining when it was appropriate to do video visits or e-visits rather than requiring an in-person visit. BWH also had to design the projects to avoid increasing burnout by adding to the time clinicians spent providing patient care, Licurse said.

He also discussed the costs and benefits that systems that are considering similar options should consider. He said initial costs include the need to build additional capacity in the EMR and contract with a video vendor. The quality of care that these enable, however, exceeds the quality of care from more basic means of providing remote care, such as telephone or email consultations. “There are upfront infrastructure and technology costs, but important system-level gains come back in return,” he said. “It improves access and helps determine the best site of service for patients coming through different parts of the system.”[24]

CARING FOR PATIENTS WHERE THEY ARE: HOME CARE

A select number of health care institutions are experimenting not just with efforts to diagnose and advise patients remotely but also to provide care services for patients through “Hospital at Home” programs, in which older patients are evaluated in a clinical setting such as the emergency room and then receive inpatient-level care at their homes. Johns Hopkins pioneered the program, which has achieved mortality results that are as good as or better than conventional inpatient admission while achieving higher patient satisfaction.[25]

The Johns Hopkins program began with a pilot trial of 17 patients from 1996–98, which was then tested from 2000–02 at three Medicare managed care organizations and one Veterans Affairs (VA) medical center. A National Demonstration and Evaluation Study found that the program equaled the quality standards of an acute-care hospital but with shorter lengths of stay, lower costs, and higher patient and family member satisfaction.[26]

24 Lynch Timothy (Senior Director of Foundation Programs, ABIM Foundation, Philadelphia, PA). Interview with Adam Licurse, MD (Brigham and Women’s Hospital, Boston, MA). 2017 Jan 27.

25 Conley J, O’Brien CW, Leff B. Alternative strategies to inpatient hospitalization [Internet]. JAMA Intern Med. 2016;176(11):1693-1702 [cited 2017 Apr 27]. Available from: http://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2560377.

26 Leff B, Burton L, Mader, SL, Naughton B, Burl J, Inouye SK, Greenough WB, Guide S, Langston C, Frick KD, Steinwachs D, Burton JR. Hospital at home: feasibility and outcomes of a program to provide hospital-level care at home for acutely ill older patients. Ann Intern Med. 2005 Dec 6;143(11):798-808.

A number of VA centers, along with Presbyterian Health Services in Albuquerque, New Mexico, implemented similar programs over the ensuing decade, and a federally-funded project is now underway to use the model at the Icahn School of Medicine at Mount Sinai (Mount Sinai) as a component of a possible 30-day bundled payment model for fee-for-service Medicare.[27]

This pilot is seeking to overcome a significant obstacle to spread of the model: the lack of reimbursement from Medicare or private insurers. "It's not a huge step clinically to take care of a hospitalized patient at home, but the systems and payment don't exist to be able to do it," said Linda DeCherrie, MD, the director of Mount Sinai's Visiting Doctors program and leader of the pilot.

Mount Sinai received $9.6 million from CMS to establish a Mobile Acute Care Team (MACT) program that offers Medicare patients whose conditions justify hospital admission the option to receive the same level of acute care as they would have received in the hospital in their home environment. This program launched in 2014 and applies to patients at multiple Mount Sinai locations.

As of last summer, Mount Sinai had provided hospital-level care to 236 Medicare patients in their homes for conditions that included asthma, congestive heart failure, chronic obstructive pulmonary disease, cellulitis, community-acquired pneumonia, dehydration, diabetes, deep venous thrombophlebitis and urinary tract infection.[28] Patients receive daily visits from a physician or nurse practitioner, and have equipment, therapy and other services provided in their homes. They must continue to live in their homes until their treatments are completed. Video visits are also being implemented.

Thus far, the program has replicated the positive results of other "hospital at home" programs. Mount Sinai reports that according to preliminary data, the average length of stay for at-home treatment was 3.6 days, as compared to 5.1 days for an inpatient hospital stay for the same condition. Moreover, patients treated at home had fewer emergency department visits and hospital readmissions within 30 days.[28]

Although the results have been positive, Dr. DeCherrie said there have been many obstacles. She said it has been a "very challenging culture change."[29] For example, when emergency physicians admit a patient to the hospital, they simply press a button. But it's not so simple for program participants; a home safety screen must be completed first and the patients must consent, extending the time they spend in the ER. "Whenever there are crowded conditions in the ER, clinicians are going to choose the path of least resistance," Dr. DeCherrie said. "We have had to put a lot of resources into being in the emergency department, and getting face time with physicians."

27 Klein S, Hostetter M, McCarthy D. The hospital at home model: bringing hospital-level care to the patient [Internet]. New York (NY): The Commonwealth Fund. 2016 Aug 22 [cited 2017 April 27]. Available from: http://www.commonwealthfund.org/publications/case-studies/2016/aug/hospital-at-home

28 A paradigm shift in health care delivery [Internet]. Inside Mount Sinai, 2016 Jun 25 [cited 2017 Jan 31]. Available from: http://inside.mountsinai.org/blog/a-paradigm-shift-in-health-care-delivery/#more-11043

29 Lynch Timothy (Senior Director of Foundation Programs, ABIM Foundation, Philadelphia, PA). Interview with Linda DeCherrie (Associate Professor, Internal Medicine and Geriatrics and Palliative Medicine, Mt. Sinai Hospital). 2017 Feb 7.

She said physicians were skeptical that sick patients could receive the care they needed at home. “They couldn’t imagine that we can do twice-a-day antibiotics, labs, home monitoring,” Dr. DeCherrie said. “They were also worried about liability. We were very clear that these patients weren’t being discharged.”

Currently, only one private insurer in New York reimburses Mount Sinai for services delivered by the MACT program.[30] Mount Sinai is negotiating with other insurers. The CMMI grant will end in September, at which point Mount Sinai will no longer be reimbursed by Medicare for care delivered as part of the program. Dr. DeCherrie said that continuing the program will require participation from 4–6 insurers. Albert Siu, MD, will offer an innovation session about this program at the Forum.

To address the continuing health needs of older patients, Boston Medical Center’s geriatric medicine unit operates a home-visiting program that is aimed at promoting wellness and improving daily functioning. Sharon Levine, MD, the Associate Director, Geriatric Medicine Fellowship Program, and an ABIM Foundation Trustee, will say more about this program, which is a certified patient-centered medical home, at an innovation session at the Forum.

Finally, patients seeking home care in the Los Angeles, San Francisco and Dallas areas also have the option of receiving services from Honor, a for-profit care provider. Kelsey Mellard, who leads Honor’s health system integration efforts, will present at the Forum. Unlike hospital at home programs, Honor is not targeted to patients in need of hospital-level care. Rather, it provides services such as medication reminders, support for staying active, meal prep and grocery shopping, transportation, light housekeeping, personal care and hygiene, companionship and check-in visits.

BUILDING ON INNOVATION: FINANCIAL CHALLENGES AND OPPORTUNITIES

As demonstrated by the uncertain fate of Mount Sinai’s program and others discussed above, the economic case for programs that address patient needs outside the traditional clinical setting is complex. Many of these programs have demonstrated that they can reduce health care costs overall. For example, a program run by the Cambridge Health Alliance in Massachusetts, which uses community health workers to access a variety of medical, public health and social support resources for patients with childhood asthma, has provided a return of $4 for every dollar spent.[31] But the savings delivered by these programs do not necessarily benefit the health care organizations supporting them.[32] Rather, the bottom-line impact for health care organizations of providing care at home, or actively engaging in connecting their patients with resources, can vary based on their particular business models and funding sources. For institutions that are dependent on fee-for-service reimbursement, concerns can be particularly stark. A board member at Delaware’s Nemours shared what an industry observer told him: “I’ve never before seen an organization with goals and objectives to put itself out of business.”[1]

30 Jeter P. N.Y. mobile acute care team swaps inpatient services for care at home [Internet]. Fort Atkinson (WI): EMS World, 2016 Apr 21 [cited 2017 Apr 27]. Available from: http://www.emsworld.com/article/12197750/ny-mobile-acute-care-team-swaps-inpatient-services-for-care-at-home

31 Shortell S. Bridging the divide between health and health care. JAMA. 2013;309(11):1121-22.

32 Leatherman S, Berwick D, Iles D, Lewin LS, Davidoff F, Nolan T, Bisognano M. The business case for quality: case studies and an analysis. Health Aff (Millwood). 2003 Mar-Apr;22(2):17-30.

Of course, as noted in the introduction, experiments with these programs are occurring against the backdrop of a larger transition from "volume to value" as the basis for payment. Should this transition be as comprehensive as its backers hope, health systems will be strongly incentivized to find ways to reduce the costs of care of the populations they serve. As such, the programs described in this paper offer a potential way forward in a new environment.

There are also numerous examples of payers that are interested in using care outside of the traditional clinical setting to improve care while reducing its cost. Bellin Health, a nonprofit health care delivery system with two hospitals in Wisconsin and Michigan, was looking for a solution to the rising health care costs of its own workforce. It implemented the Total Health Model, which includes, among other things, the establishment of workplace clinics to manage minor conditions and providing nutritionists, health coaches, fitness experts and others for employees.[33] The intervention stabilized health care spending at Bellin and was adopted by other employers in the region. Although the context is different from many of the programs described above, it demonstrates the value of providing care where people are, rather than relying on their seeking out care on their own.

Others are trying to create a business model that makes sense in addressing social determinants for a lower-income population. Some states are looking to create Medicaid Accountable Care Organizations, and Massachusetts has received a CMS waiver that will permit it to experiment with an ambitious ACO program that is expected to launch in December 2017. The program will feature three separate models, but each will involve partnering with Community Partners that are expected to offer comprehensive management of physical and behavioral health and ensure that patients' social services needs are met. Among other things, these services can include home- and community-based services to divert individuals from institutional placement and physical activity and nutrition supports.[34]

EDUCATING PHYSICIANS TO WORK OUTSIDE THE WALLS

If health systems are to expand their reach and move beyond the clinical encounter-based paradigm for delivering care, the medical educational system will likely need to change in order to help trainees and, where possible, practicing clinicians develop appropriate competencies. In a 2016 report, a committee of experts convened under the auspices of the Institute of Medicine (now the National Academy of Medicine) called for "a holistic, consistent and coherent framework that can align the education, health, and other sectors, in partnership with communities, to educate health professionals in the social determinants of health."[35] The committee developed a framework for health professional educators to use as a guide "for creating lifelong learners who appreciate the value of relationships and collaborations for understanding and addressing community-identified needs and for strengthening community assets."[35] The framework was organized around three domains – education, community and organization—and included nine components: experiential learning, collaborative learning, integrated curriculum and continuing professional development (education); reciprocal commitment, community priorities and community engagement (community); and supportive organizational environment and vision for and commitment to social determinants of health education (organization).

33 American Hospital Association. Total health model at Bellin Health System. Chicago (IL): Hospitals in Pursuit of Excellence Case Studies. Engaging Health Care Users: A Framework for Healthy Individuals and Communities [Internet]. 2012 Sept [cited 2017 Apr 27]. Available from: http://www.hpoe.org/resources/case-studies/1264

34 Lloyd J, Heflin K. Massachusetts' Medicaid ACO makes a unique commitment to addressing social determinants of health [Internet]. Hamilton (NJ): Center for Health Care Strategies. 2016 Dec 19 [cited 2017 Apr 27]. Available from: http://www.chcs.org/massachusetts-medicaid-aco-makes-unique-commitment-addressing-social-determinants-health/

35 Institute of Medicine (US). A framework for educating health professionals to address the social determinants of health: report in brief [Internet]. Washington (DC): National Academies Press, 2016 March [cited 2017 Apr 27]. 4 p. Available from: http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2016/SDH-Resources/SDHeducation-RiB.pdf

As part of the effort, the committee recommended increasing the inclusivity and diversity of the health professional student body and faculty, and for regulatory bodies to include the social determinants of health in their "educational and professional vision, mission and standards." The committee was also clear that much needs to be learned about the best ways to provide the necessary education, writing that "it is clear that the evidence on how transformative learning of health professionals, students, and trainees for addressing the social determinants of health is not well known." It also described a duty for health professionals "to develop appropriate skills and attitudes to be advocates for change."

A few residency programs are attempting to meet this challenge. For example, at the internal medicine residency program at Cambridge Health Alliance (CHA) in Boston, residents must complete a yearlong health advocacy course that includes a group research–based health advocacy project.[36] The goals of the course include:

- clarifying and further developing the values that lead residents to train in a program that is committed to treating underserved populations;
- exploring how physicians can play a role in addressing systemic health inequities;
- improving residents' knowledge of the social determinants of health and health equity topics;
- developing skills in research methodology, leadership and health advocacy; and
- providing mentoring and role modeling to support career development that incorporates health advocacy.

Leaders of the course have written that "[b]y making an institutional commitment to health advocacy as a core component of being a physician, our residency program aims to reframe the responsibilities of medical practice and further shape professional identity and goals."[36] They point to the course's popularity with residents, who have rated it highly and described it as a highlight of the residency experience. Indeed, they suggest that leaders at CHA have championed the program in part because it attracts "high-caliber residents." They also suggest that they will use the program as a platform to advocate for a national health advocacy competency framework.

CONCLUSION

Over the course of the Forum, participants will hear many more examples of experimentation with providing care outside traditional boundaries, as well as the perspectives of clinicians, system leaders, payers, patients and others. This is a growing field, with an intriguing but uncertain future. Undoubtedly, participants will return to their institutions with new ideas for implementation and questions for research.

36 Basu G, Pels RJ, Stark RL, Jain P, Bor, DH, McCormick D. Training internal medicine residents in social medicine and research-based health advocacy: a novel, in-depth curriculum. Acad Med. 2017 Apr;92(4);515-20.