ABSTRACT

The past decade has seen a growing recognition of the importance of social determinants of health for health outcomes. However, the degree to which US health systems are directly investing in community programs to address social determinants of health as opposed to screening and referral is uncertain. We searched for all public announcements of new programs involving direct financial investments in social determinants of health by US health systems from January 1, 2017, to November 30, 2019. We identified seventy-eight unique programs involving fifty-seven health systems that collectively included 917 hospitals. The programs involved at least $2.5 billion of health system funds, of which $1.6 billion in fifty-two programs was specifically committed to housing-focused interventions. Additional focus areas were employment (twenty-eight programs, $1.1 billion), education (fourteen programs, $476.4 million), food security (twenty-five programs, $294.2 million), social and community context (thirteen programs, $253.1 million), and transportation (six programs, $32 million). Health systems are making sizable investments in social determinants of health.

The World Health Organization defines social determinants of health as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.” Social determinants account for substantially more of the variation in health outcomes than medical care does. Interest in addressing social determinants of health has increased markedly in recent years, as exemplified by new attention from policy makers and researchers. The Department of Health and Human Services (HHS) included creating social and physical environments that promote good health for all as one of only four overarching goals in Healthy People 2020, a set of objectives identified once a decade to improve the health of all Americans. In 2010 the Affordable Care Act (ACA) mandated that tax-exempt hospitals conduct community needs assessments every three years and participate in community-level planning to improve community health. In 2014 the National Library of Medicine added Social Determinants of Health as a Medical Subject Headings term to enable searches on this topic, in recognition of the burgeoning literature in the field.

In 2018 Alex Azar, the HHS secretary, stated that HHS is “deeply interested” in addressing social determinants of health. The Centers for Medicare and Medicaid Services recently issued new Medicaid waivers to cover social determinants of health. The Center for Medicare and Medicaid Innovation is funding a number of programs targeted at social determinants, such as the 2018 Accountable Health Communities Model; the Integrated Care for Kids Model, which focuses on linking behavioral and physical health care; and the Maternal Opioid Misuse model, which encourages state Medicaid a...
cies to help pregnant women with opioid use disorder obtain services such as supportive housing. Health systems are beginning to appoint directors of social determinants, health equity, and population health and are increasingly adopting patient-level screening for social determinants. Evidence is accumulating that investments in this area can have positive effects on morbidity and mortality.

Nonetheless, hospitals have historically invested little in addressing social determinants. One potential investment avenue is community benefit spending. However, only about 5 percent of this money is spent on community-based activities, most of which are focused on health but not necessarily on social determinants. Moreover, the proportion of hospitals’ community benefit spending allotted to community-based activities had not increased as of 2014 despite the new requirements of the ACA. Therefore, in the wake of increasing interest and new policy requirements, we investigated how many health systems are making major new investments that directly address social determinants, and how these investments are being allocated across social sectors.

Study Data And Methods

There is no single, universally accepted definition of social determinants of health. We followed the definitions laid out in Healthy People 2020, which defines five areas: economic stability (employment, poverty, housing instability, food insecurity), education (early childhood education and development, high school graduation, enrollment in higher education, language, literacy), social and community context (civic participation, discrimination, incarceration, social cohesion), health and health care (access to health care, access to primary care, health literacy), and neighborhood and built environment (access to foods that support healthy eating patterns, crime and violence, environmental conditions, quality of housing).

We found early on that health systems engaging in community-based work invariably described their programs as addressing social determinants of health. Accordingly, instead of attempting to search for every type of social determinant that could be targeted by health systems for intervention, we searched more broadly for interventions described as being targeted at social determinants or community health. To identify announcements by hospitals or health systems of investments in community health or social determinants of health, we searched LexisNexis and Google for news articles and press releases that included the terms health system or hospital and investment and social determinant of health or community health in the two-year period January 1, 2017–November 30, 2019, with the US as the location. We read each identified article and followed up with searches using Google if needed to identify additional information about each investment. Where available, we reviewed relevant health system or hospital and collaborating agency web pages and posted documents. We considered any type of funding commitment to be an investment in social determinants—from direct grants by health systems to community agencies without expectation of direct return or repayment to investments that were expected to generate a return. However, we had insufficient data on the degree to which a return was expected to be able to separate out the two types of community investments.

We excluded programs in which health systems were using only funds granted by other organizations; programs that provided direct medical care, subsidized unfunded care, or funded medical education; those focused only on the health care social determinant domain, except the ones that focused on providing transportation to improve health care access; those focused only on creating or implementing social determinants screening or referral tools; hospital renovation programs; programs that increased the minimum wage; and those that involved community investments only by financing agencies or insurance payers.

We categorized each initiative by target area, adapted from the Healthy People 2020 domains. Because of the large number of programs that focused on the economic stability domain, we divided it into its component parts. We also combined housing instability (in the economic stability domain) and quality of housing (in the neighborhood and built environment domain) into a single housing category, since in practice these foci were often present in the same housing-focused programs. As noted above, we excluded programs that were solely in the health domain. We therefore included six categories: employment (local hiring and purchasing, workforce development, investments in local businesses, economic opportunity programs), food security (meal programs for patients, food banks, produce stands, grocery stores, food delivery, farms, nutrition programs), housing (housing quality and stability), education (early childhood education, language and literacy), social and community context (community well-being or cohesion, civic participation, incarceration), and transportation (transportation for medical care, improved community transportation infrastructure).
We also recorded information on scale (total dollars committed overall and per year), health system characteristics (location; ownership; acute care beds; participation of any member hospital as of the fourth quarter of 2016 in the voluntary Medicare Bundled Payments for Care Improvement [BPCI] Initiative or the mandatory Comprehensive Care for Joint Replacement (CJR) model; and participation as of 2016 in any commercial, Medicare, or Medicaid accountable care organization [ACO] contract), and funding partners. To identify health system characteristics, we linked each health system or hospital to the 2016 Compendium of U.S. Health Systems of the Agency for Healthcare Research and Quality (AHRQ). The compendium includes information on all 626 US health systems (defined by AHRQ as at least one hospital and at least one group of physicians jointly providing comprehensive care and connected through common ownership or joint management).17 These health systems include 3,513 of the 4,749 nonfederal acute care hospitals in the US. We were able to match every participating hospital to an associated AHRQ health system.

**Analysis** We calculated descriptive statistics on the characteristics of our selected health systems and on the scope, scale, and focus of funded programs. We then analyzed whether the characteristics of health systems investing in social determinants (teaching status, BPCI Initiative participation, ACO participation, and bed size) were different from those of systems not investing. We used chi-square tests for categorical variables and t-tests for continuous variables.

All statistical analyses were conducted with SAS, version 9.4, with a two-tailed significance threshold of \( p = 0.05 \).

**Limitations** Our results quantified the scope and scale of investments in upstream social determinants by health systems at a substantially more granular level than has previously been available. However, there were some limitations. First, health systems may have made investments without publicly announcing them, though we suspect that any such investments would likely have been small since investment leads to public relations benefits.

Second, we could have missed some announcements if they were not captured by our search strategy, although we confirmed the accuracy of that strategy by doing other, more specific searches—such as for the terms *housing* and *hospital* and *program*. Some investments may have been made in kind and would therefore not be quantifiable. We could not always disentangle how much was committed by health systems in particular, as many programs were collaborative investments by a variety of community groups. Where we could not be sure, we omitted the investment from our calculations of total investment. Not all announcements listed the monetary commitment specifically. Accordingly, our estimates likely represent a lower bound of the total dollars committed to investments in social determinants of health.

Third, there may also be areas in which our results overstated investments. In most cases, we identified commitments but not actual expenditures. It is possible that not all health system commitments will result in actual investments. Moreover, commitments were often projected to extend over several years. Therefore, we could not reliably estimate yearly commitments. And it is possible that health systems freed up money for publicly announced investments by shifting funds that had previously been used for similar or other work focused on social determinants or by soliciting funds from donors—which would make the net impact smaller than we supposed.

Finally, it was sometimes difficult to tell how many hospitals within each health system were participating in the work. Thus, our results could not be shown at the level of individual hospitals.

**Study Results** We identified 57 (9.1 percent) of the 626 health systems as having made specific commitments to 78 distinct programs (see online appendix exhibit A1 for details of each).18 These programs involved 917 hospitals.

**Characteristics of Investing Systems** Forty-one of these fifty-seven health systems were secular nonprofit organizations, fourteen were nonprofit sectarian health systems (largely Catholic), and two were public health systems. None were for profit. Compared with noninvesting systems, systems making investments were significantly larger (mean beds: 2,626 versus 799) and had more member hospitals (mean hospitals: 14.28 versus 4.75) (exhibit 1). Investing systems were also significantly more likely to include at least one major teaching hospital (86 percent versus 32 percent), participate in an ACO (86 percent versus 52 percent), and participate in the BPCI Initiative or the CJR model (65 percent versus 44 percent).

**Characteristics of Funded Programs** Programs were taking place in thirty states, with the largest numbers in California (fifteen), Ohio (nine), Maryland (eight), Illinois (eight), and Massachusetts (six) (exhibit 2). Twenty-nine programs did not disclose the total dollars committed to them. Among the remaining forty-nine programs, the total funds committed specifically from health systems or hospitals were approximately $2.5 billion, with a median investment...
per program of $2 million and a mean of $31.5 million. Most programs did not specify a commitment duration: The thirty-one that did averaged 5.4 years. Two programs involved health system commitments of annual expenditures for the foreseeable future.

Among the investments that denoted a particular social determinant, the dominant choice was housing, to which at least $1.6 billion was specifically committed via fifty-two programs (exhibit 2). The additional focus areas in order of frequency were employment (twenty-eight programs), food security (twenty-five), education (fourteen), social and community context (thirteen), and transportation (six).

Housing-related programs included strategies such as the direct building of affordable housing, often with a fraction set aside for homeless patients or those with high use of health care; funding for health system employees to purchase local homes to revitalize neighborhoods; and eviction prevention and housing stabilization programs. Nearly all of these programs, which are complex and costly, were conducted in partnership with state or local agencies, community development financial institutions, or local community groups. By contrast, simpler interventions such as investments in access to transportation were often conducted by health systems alone or in partnership with a single commercial entity, such as Uber or Lyft rideshare companies. Of note, these investments were typically pilot programs that were initially offered to few patients. For example, the Henry Ford Health System in Detroit launched a partnership with Lyft (which provides the rides) and a start-up named SPLT (which organizes scheduling) to offer rides to twenty-five patients who had a history of missing dialysis center appointments.19

The second most common category of investment was in employment-related programs. Some of these were in the form of direct hiring or purchasing from the community as part of anchor institution commitments. Other types of employment-related investments included developing relationships with local schools in the form of training programs, mentorship arrangements, or apprenticeships; providing job coaching assistance; and providing seed funding for locally owned small businesses and entrepreneurs or creating small-business accelerators.

Spending types included outright grants to community agencies working on social determinants of health, the reallocation of existing spending to additionally serve social determinants goals (such as local hiring and contracting programs), and investments that were expected to generate some return (such as the building of affordable housing units).

The three largest commitments were made by Kaiser Permanente ($760 million through eight distinct programs); the Johns Hopkins Health System ($162 million through four programs); and MetroHealth in Cleveland ($160 million through two programs). Exhibit 3 presents examples of investments in each sphere.

| Exhibit 1 |

Characteristics of health systems that did and did not announce investments in social determinants of health, January 1, 2017–November 30, 2019

<table>
<thead>
<tr>
<th>System characteristics</th>
<th>Systems that announced investments (n = 57)</th>
<th>Systems that did not announce investments (n = 568)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Average no. of beds****</td>
<td>2,626 —</td>
<td>799 —</td>
</tr>
<tr>
<td>Average no. of acute hospitals***</td>
<td>143 —</td>
<td>48 —</td>
</tr>
<tr>
<td>Teaching status****</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonteaching</td>
<td>1 2</td>
<td>174 31</td>
</tr>
<tr>
<td>Minor teaching</td>
<td>27 47</td>
<td>258 45</td>
</tr>
<tr>
<td>Major teaching</td>
<td>29 51</td>
<td>133 23</td>
</tr>
<tr>
<td>Includes any major teaching hospital****</td>
<td>49 86</td>
<td>184 32</td>
</tr>
<tr>
<td>Pediatric care status**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No pediatric hospital</td>
<td>47 83</td>
<td>525 92</td>
</tr>
<tr>
<td>Pediatric hospital but not majority pediatric</td>
<td>6 11</td>
<td>15 3</td>
</tr>
<tr>
<td>Predominantly dedicated to pediatric care</td>
<td>4 7</td>
<td>27 5</td>
</tr>
<tr>
<td>Participates in BPCI Initiative or CJR model***</td>
<td>37 65</td>
<td>249 44</td>
</tr>
<tr>
<td>Participates in an ACO****</td>
<td>49 86</td>
<td>298 52</td>
</tr>
</tbody>
</table>


Notes: BPCI is Bundled Payments for Care Improvement. CJR is Comprehensive Care for Joint Replacement. ACO is accountable care organization. *Not applicable. **p < 0.05 ***p < 0.01 ****p < 0.001
We found significant differences in characteristics between health systems that publicly announced making investments focused on social determinants and those that did not. The clear predominance of sectarian and other nonprofit institutions in making these investments and the absence of for-profit institutions suggest that health systems may be driven to invest in social determinants more by mission and values than by the potential for direct financial returns. However, the fact that investments are disproportionately being made by systems that are in Medicaid expansion states, in the BPCI Initiative, or in an ACO suggests that business-case considerations may also be playing a role. The complexity of making tangible commitments to improving social determinants of health is reflected in the fact that investing systems tend to be substantially larger and therefore potentially have more capacity than noninvesting systems.

Our results are consistent with national survey data, such as the data from a 2017 survey by the Deloitte Center for Health Solutions. In this survey of 300 hospitals and health systems, 88 percent reported screening patients for social needs (62 percent screened them systematically), but only 30 percent reported having a formal relationship with community-based providers for their entire target population. The survey did not explore the extent to which health systems directly funded community programs. Compared to smaller hospitals and those that were for profit or independent, respectively, larger hospitals and those that were public or not for profit were more likely to screen patients for social needs—which is consistent with our finding that those are the hospitals that are also most likely to engage in direct community investment.

A key feature of this study was our ability to identify the specific social determinants that subsidized care rather than through investment in activities not directly related to health. In one analysis of the $2.6 billion spent by all fifty-three North Carolina tax-exempt hospitals on community benefit, only 0.7 percent ($18.2 million) was spent on community investments such as affordable housing, economic development, and environmental improvements. Nationally, spending on all kinds of community health improvement activities (most of which are directly related to health) is 5 percent or less of total community benefit spending. Yet spending on community activities may be effective. For instance, although a recent study found no association between overall community benefit spending and readmission rates, hospitals in the top quintile of spending that was directed toward the community had significantly lower readmission rates than those in the bottom quintile.

Discussion

We found that in the past two years, health systems in the US have publicly committed approximately $2.5 billion toward directly addressing social determinants of health such as housing, food security, and job training. This figure is dwarfed by health systems’ overall community benefit spending, which is estimated to be over $60 billion per year. Nonetheless, it represents a substantial investment.

Historically, hospitals have tended to provide community benefit through uncompensated or...
Prior studies have been able to quantify only overall community investment. By far the most popular focus area of the programs we identified was housing, which accounted for two-thirds of total investment. Housing is one social determinant in which investing has the most immediately apparent potential return, even though it is one of the determinants in which interventions are especially complex and costly. Housing investment also has face validity, and housing is a common pain point for health care professionals, who struggle with housing-insecure patients. These findings are consistent with those in the general literature.12 In one systematic review of thirty-nine studies up to 2014 that addressed social determinants and measured health outcomes, the largest number of the studies (twelve) focused on housing, and ten of them reported benefits to health outcomes, costs, or both.12 Several subsequent publications have also shown benefits from housing-focused interventions.23–25

In general, however, the evidence for health outcome improvements from interventions focused on social determinants is thin. A different systematic review of interventions related to social determinants that included sixty-seven articles published up to 2017 found that only 30 percent (twenty articles) reported health outcomes and 27 percent (eighteen) reported health care costs.26 Furthermore, only 22 percent (fifteen) showed any benefit to health outcomes, 10 percent (seven) showed a reduction in emergency department visits or hospitalizations, and 7 percent (five) showed any benefit to health care costs. In fact, programs focused on multiple social determinants, food security, and legal interventions all had more articles showing positive impacts on outcomes, compared to those focused on housing. However, the quality of studies in most of the articles reviewed was poor. This is very little evidence on which to base billions in investment and may partially explain why investments to date have lagged. In the Deloitte survey, 48 percent of respondents reported that evidence for improved outcomes would increase their investments in social needs activities.22

Overall, we found that the increasing public interest in social determinants of health has been accompanied by health system investments in social determinants of at least $2.5 billion in the past two years, largely in housing. However, these investments still represent a small fraction of overall spending by health systems, which at present are much more likely to be developing screening and referral programs than directly investing in social determinants of health.
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NOTES


18 To access the appendix, click on the Details tab of the article online.


