

HOUSING HEALTH

Innovations in the Field

How Investing in Housing Can Save on Health Care

A Research Review and Comment
on Future Directions for Integrating
Housing and Health Services

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Having access
to safe, stable
and affordable
housing can
lead to better
health outcomes.

The Affordable Care Act (ACA) was signed into law in March 2010, and one of its explicit objectives is to lower overall health care costs by improving individual and community health.¹ Under the ACA, there are opportunities and obligations for health care providers, policymakers, and states to develop innovative payment methods and health care delivery systems to reduce public spending on health care. In addition, the ACA gives states incentives to expand access to Medicaid, specifically to low-income, non-elderly, childless individuals. Implicit in the ACA and expanded Medicaid are incentives and requirements to take into account the social determinants of health, including housing, in order to better coordinate care and address social influences on health.²

Having access to safe, stable and affordable housing can lead to better physical and mental health and improve overall quality of life in a variety of ways.³ When families have access to affordable housing, they can spend more on food and health care, which can lead to better health outcomes.⁴ Housing in neighborhoods of opportunity can lead to less stress and social isolation and better physical health outcomes, including lower rates of obesity.⁵ A safe and secure place to live can help homeless individuals with chronic health conditions access medical care, maintain good health regimens, and experience better physical and mental health.⁶ Because of these links between housing and health, investment in housing and resident services can potentially result in a net public savings if spending on public health-related services is reduced.⁷

While there is an extensive body of research documenting the broad positive health outcomes associated with stable and affordable housing, there is very little empirical research that has monetized the health benefits associated with affordable housing programs and compared these savings to the costs of the programs. In order for the housing and public health communities to better work together, it is important to have better information about the cost-effectiveness of housing programs—that is, how public investment in housing and housing-related services can reduce public health spending.

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What is the Best Way to Evaluate Program Impacts?

There is broad consensus in the research community random-assignment experiments are the best way to measure program impacts. The so-called “gold standard” of program evaluation, this type of study randomly assigns individuals (or households) to one of two groups: those who receive the program services (the “intervention group”) and those who do not (the “control group”). By randomly assigning individuals (or households) in this way, the differences in outcomes observed can be attributed to the program, as opposed to any other differences—either observable or unobservable—between the two groups.

Random-assignment experiments are the ideal for evaluating the impacts of social programs; however, the downside to these experimental methods is that they are time consuming and costly and can be burdensome for program staff.⁸ There

are also practical and ethical issues related to the random-assignment process. As a result, many researchers use other “quasi-experimental” methods for measuring impacts. The best quasi-experimental evaluations attempt to mimic the process of random assignment by using statistical or other techniques to construct a “comparison group” of individuals with characteristics that are similar to those of individuals who are receiving program services. By controlling for characteristics that might be related to program outcomes (including, usually, demographic and economic characteristics), researchers can better isolate the share of the observed change in outcomes that can be attributed to the program. Some common techniques for isolating impacts in a quasi-experimental study include multivariate statistical analysis, propensity score matching, and pre-/post-intervention same-sample analysis.

One way to measure the cost-effectiveness of housing interventions is to monetize the benefits produced by a program and compare the value of the benefits to the program costs. Monetizing both the costs of a program and the benefits it produces can provide an assessment of return on investment—or “bang for your buck”—for public expenditures.

In practice, a comprehensive analysis of costs and benefits can be quite difficult. Quantifying the full spectrum of benefits often can be challenging because many benefits are difficult to measure and are observed only over the long term. One of the major obstacles to analyzing the effectiveness of programs that meet health needs through the provision of housing is that data on program costs (i.e., housing) are maintained by one agency while data on outcomes (i.e., health) generally are maintained by another. Despite the challenges associated with conducting rigorous evaluations of costs

and benefits, these types of analyses can offer important information on how health care organizations can invest resources in addressing affordable housing in order to improve health and reduce health care spending.

Supportive Housing for Homeless and At-Risk Populations

The most comprehensive research that has quantified the health savings associated with housing programs has focused on supportive housing programs for homeless individuals, particularly individuals with chronic health conditions, mental illness and/or substance abuse problems. Supportive housing provides independent housing coupled with intensive case management services.⁹ Providing both housing and enhanced case management in a supportive housing model can be expensive.¹⁰ However, quantifying the costs and

Cost effectiveness analyses can provide important information to help housing and health organizations work together to improve health outcomes.

In New York City, the additional days of hospital care for a mentally ill homeless individual costs \$17,500 per year—much more than the \$12,500 it costs to provide supportive housing.

benefits of these programs has helped to shed light on the extent of the benefits—particularly in terms of savings on health care—and has generally provided support for their effectiveness.

An early study of the relationship between health care costs and homelessness found that homeless individuals in New York City were much more likely to be hospitalized and have longer hospital stays than other low-income populations, and that providing housing for mentally ill homeless individuals could be a cost-effective way to promote positive health outcomes.¹¹ The researchers estimated that the additional days of hospital care for a mentally ill homeless person would cost \$17,500 per year, while the cost of providing a unit of supportive housing would cost \$12,500. While this study lacked a well-constructed and sufficiently similar comparison group, the results provided compelling evidence of the potential cost-effectiveness of supportive housing programs serving mentally ill homeless individuals.

Robert Rosenheck, Director of Yale Medical School's Division of Mental Health Services and Outcomes Research, reviewed some of the other early evaluations on the cost-effectiveness of programs targeting homeless individuals with mental illness.¹² He found that providing housing and services reduced the use of health and other public services; however, in many cases the research he reviewed showed that the costs of the housing and services provided were greater than the cost savings that resulted. He concluded that programs are cost-effective—that is, cost savings outweigh the program costs—when they target individuals who are the highest users of health care, including homeless individuals with mental illness, chronic health conditions and/or substance abuse issues.

More recent research monetizing the health (and other) benefits of supportive housing programs for the homeless has used more rigorous evaluation methods

that have measured outcomes both for individuals receiving housing and services and for a comparison group. The 2002 seminal research by Dennis P. Culhane, Stephen Metraux and Trevor Hadley,¹³ sometimes referred to as the “Culhane Report,” is an analysis of the costs and benefits of housing and services provided under the New York/New York Agreement to House Homeless Mentally Ill Individuals (commonly called the “NY/NY housing program”). The NY/NY program provides supportive housing to homeless individuals with severe mental illness in New York City. The primary goal of the study was to determine whether homeless individuals who were placed in supportive housing used fewer health services and were less likely to be incarcerated compared with those who were not in supportive housing, which would potentially result in a net public savings. By merging data from the New York City Human Resources Administration and the New York City Department of Homeless Services, as well as from city and state departments of public health and corrections and the U.S. Department of Veterans Affairs, the researchers tracked outcomes for nearly 4,700 homeless individuals with several mental disabilities between 1989 and 1997. As an improvement over the methodologies used in prior studies, the researchers used statistical techniques to construct a comparison group of individuals who had similar characteristics to those who received housing and services (e.g., similar demographics, similar mental health statuses and similar baseline health utilization patterns).

The researchers found that placement in the NY/NY program was associated with a reduction in the number of days individuals spent in the hospital and the number of inpatient health services used. Per placement year—that is, annual results over the two-year period following placement in the NY/NY program—there was an annual health cost savings of \$12,757 per housing unit. The biggest cost savings was associated with a decline in

services provided by the state psychiatric hospital system, but savings were also realized at city hospitals, VA hospitals and for other Medicaid-reimbursed inpatient hospital services. The researchers also found a savings of about \$3,500 per supportive housing unit, attributable to less use of the city shelter system and the city criminal justice system, for a total public cost savings of \$16,821 per unit per year.

The researchers compared these public cost savings with the costs of providing housing and services to individuals in the NY/NY program. On average, the cost of the NY/NY program was \$18,190 per unit. Thus, the researchers found that the net public costs of providing a unit of supportive housing to this population was \$1,909 per year (i.e., \$18,190 minus \$16,281). In other words, 90 percent of the costs of the supportive housing, including operating, service and debt service costs, were covered by reductions in the use of other public services.

While the calculated benefits did not outweigh the costs in the study of the NY/NY program, the service reduction and cost savings measured in this study were likely conservative estimates. First, they took into account savings only in the first two years after placement in the NY/NY program, and research has shown that use of services, including health services, can actually increase temporarily after having access to case management.¹⁴ Second, there may be longer-term health impacts not measured in the study that might result in long-term cost reductions. And, finally, this study did not include the whole range of potential cost savings, such as health-related savings achieved through services funded by the federal Health Care for the Homeless program and other health care services funded by grants from the Department of Housing and Urban Development's (HUD's) McKinney-Vento program, or the costs of uncompensated care at private hospitals.

There are other caveats to consider when drawing conclusions from this

evaluation. The Culhane Report focused explicitly on homeless individuals with severe mental illness. To be eligible for the NY/NY program, individuals must have a diagnosis of severe mental illness and have been recently homeless in shelters or on the streets. As a result, the NY/NY program serves individuals who are among the highest users of health services; therefore, the potential cost savings on the health side are likely greater for this population than for a general homeless or low-income population. In addition, this study focused on a New York City program, which raises the question of whether the results would be generalizable to other programs in other locations across the country.

The Culhane Report set the stage for additional studies of supportive housing programs. A 2003 random-assignment evaluation of the HUD-VA Supportive Housing (HUD-VASH) program found mixed results associated with the impacts of programs that combine housing and health services for homeless veterans.¹⁵ The HUD-VASH program provides special Section 8 vouchers along with intensive case management to homeless veterans with mental illness and/or substance abuse disorders. For this study, a sample of 460 of these individuals was randomly assigned to the HUD-VASH program, intensive case management only, or standard VA care, which includes only short-term case management by VA staff. After three years, researchers found that assignment to the HUD-VASH program resulted in somewhat better health outcomes and more social interaction compared to only case management or standard VA care. However, the HUD-VASH program was significantly more expensive than the other two interventions, and resulted in higher health care expenses. Over three years, individuals in the HUD-VASH group accrued an average of \$36,524 in health care costs, compared to \$35,095 for individuals receiving intensive case management and \$28,515 for those receiving standard VA care. Despite higher spending on health services, there were

Researchers found that the HUD-VASH program resulted in somewhat better health outcomes and more social interaction for homeless veterans compared to only case management or standard VA care.

In Seattle, a Housing First program resulted in health cost savings of \$42,964 annually while the cost of providing housing and services was just \$13,440.

no significant differences in measures of mental and physical health among the three groups. The HUD-VASH program cost \$900 more per person than intensive case management and \$2,067 more than standard VA care. The researchers concluded that the HUD-VASH program was not necessarily a better approach than housing vouchers alone.

In another study that quantified the costs and benefits of a supportive housing program, researchers in Seattle evaluated the health care savings associated with a Housing First program, 1811 Eastlake, which serves homeless individuals with severe alcohol problems.¹⁶ Outcomes for a group of individuals who received housing were compared with those for a group of similar individuals who were on the program waitlist for housing.

Data were collected from the King County Mental Health, Chemical Abuse and Dependency Services Division, the Washington State Department of Social and Health Services, Harborview Medical Center, Public Health Seattle and King County, and the Downtown Emergency Service Center, along with the King County Correctional Facility. Researchers also had access to Medicaid claims data for individuals in the study. A comparison of outcomes, including the costs of health services used, was made at six months after the intervention.

This study in Seattle provided strong evidence that the health care cost savings more than offset the costs of the housing and services provided to this particular group of homeless individuals. At six months after the intervention, the researchers found that even after accounting for the cost of housing, individuals in the Housing First model saved the public \$2,449 per month as a result of a decline in the usage of health care services, primarily attributable to a decline in Medicaid-reimbursed health services. On an annual basis, the health cost savings were measured at \$42,964 per person per year, while the cost of the

housing program was \$13,440 per person per year. Furthermore, researchers found that use of health services dropped even further the longer individuals were housed.

Several caveats associated with this study should be mentioned. Part of the high cost savings measured could be attributed to the Seattle program targeting individuals with the highest health care usage prior to the intervention, which provided opportunities for more cost savings to be realized. Therefore, the results observed may not be generalizable to the overall homeless population. Furthermore, the study examined a very small sample size (95 individuals in the treatment group and 39 individuals in the comparison group). The study also included data on health care usage from only one hospital in King County, which could have understated total health care costs and potential savings. Despite these limitations, this evaluation, with its rigorous study design, provides further evidence of the cost-effectiveness of the Housing First model for homeless individuals with substance abuse issues.

Programs in other parts of the country have also been examined with a cost-effectiveness approach. In 2007, researchers in Maine analyzed the costs and benefits of providing permanent supportive housing to homeless individuals with disabilities.¹⁷ Individuals were provided housing and intensive case management at one of two permanent supportive housing developments in Portland. Individuals volunteered to participate in the study, and they were tracked before and after receiving housing. Using data collected from a variety of public agencies and nonprofit groups, the researchers found that in the year prior to receiving permanent supportive housing, the homeless individuals in the study used \$28,045 worth of public services. In the year after receiving housing, those individuals used \$14,009 worth of health services, a decline of more than \$14,000 per person per year. The cost of providing the permanent supportive housing was

\$13,092 per person per year, so the net public savings was estimated at about \$900 per person per year.

In a large-scale study conducted in 2009 in Los Angeles County, researchers analyzed the public costs of providing supportive housing to homeless individuals, assessing outcomes for more than 10,000 homeless people, including about 1,000 individuals who were provided with permanent supportive housing through the Skid Row Housing Trust (SRHT).¹⁸ Unlike some earlier studies, this analysis focused on the general homeless population, rather than high health care user groups (e.g., individuals with mental illness or substance abuse problems). Data for current and former residents of the SRHT were compiled from county agencies, including the departments of Health Services, Mental Health, Public Health, Public Social Services, Probation, and Sheriff, as well as from the Los Angeles Homeless Services Authority.

The researchers compared health care usage and costs for the approximately 1,000 individuals accessing supportive housing with outcomes for a group of homeless individuals who had similar characteristics. This comparison group was constructed using statistical techniques that approximated a random-assignment process. Comparisons were also made between individuals in supportive housing and individuals who had access to supportive housing but left. Finally, researchers also analyzed outcomes for persons on general relief (i.e., a welfare program that benefits adults without dependents) who had episodic periods of homelessness, which allowed them to compare costs in months when they were homeless versus months when they were housed.

In this Los Angeles study, the researchers found that the public cost savings significantly outweighed the public cost investment in supportive housing. Specifically, they found that while the average cost per supportive housing



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resident was \$1,110 per month (including both operating and capital costs), the average monthly savings was calculated at \$2,291 per resident, which resulted in a net savings of \$1,190 per person per month, or \$14,280 annually. Three-quarters of the cost savings was attributed to a reduction in the use of health services, primarily inpatient hospitalizations, outpatient clinics, paramedics, and emergency room services. The cost savings were greatest for individuals with mental illnesses, substance abuse problems and/or HIV/AIDS. As with other studies, there are caveats about the completeness of the

outcome data. However, the study, which included a large and diverse sample, provides compelling support for the cost-effectiveness of the Los Angeles County program in meeting the needs of the general homeless population.

Most of the research on the cost-effectiveness of supportive housing programs has focused on relatively short-term impacts. However, new research examined the long-term cost-effectiveness of providing supportive housing to homeless seniors in San Francisco.¹⁹ Researchers tracked outcomes over seven years for 51 seniors with severe psychiatric, medical and/or substance abuse issues who moved into the Mission Creek supportive housing development from the city-operated skilled nursing facility. The primary objective of the evaluation was to determine if a supportive housing model could be a cost-effective alternative to care in a skilled nursing facility at the end of life for individuals who are homeless or at risk of homelessness.

Mission Creek follows a Housing First model and provides housing and services for homeless seniors as well as for low-income seniors receiving rental support from the Housing Choice Voucher program and individuals with HIV/AIDS who are receiving rental support through the Housing Opportunities for Persons with AIDS (HOPWA) program. Data on health care services were compiled from the San Francisco Department of Public Health, the Mission Creek Adult Day Program, and the Laguna Honda Hospital and Rehabilitation Center (a skilled nursing facility), but costs were estimated based on the median state Medicaid program (Medi-Cal) reimbursement rates. In 2013—the end of the seven-year study period—public expenditures for the 51 residents in supportive housing (including operations, maintenance and case management) were \$792,114, or \$15,532 per individual. In that year, the 51 seniors used a total of \$1.46 million less in public health services than they did in the year prior to moving into supportive housing, or \$28,627 total per person. Thus, the net

**Mercy Housing Mission Creek Apartments
in the Bay area.**



Courtesy of Mercy Housing, Inc.

public savings associated with supportive housing was estimated to be \$13,095 per person per year (at year seven).

The researchers acknowledge that they did not construct a comparison group in the evaluation of the benefits of the Mission Creek supportive housing program. They note, “although having an appropriate control group would have been particularly useful when comparing the health care use of the tenants referred from community sites, using estimates of cost avoided for the tenants placed from the skilled nursing facility provides an accurate model of the cost had these individuals been unable to be placed outside of the institution.”

The research on the health benefits of supportive housing has focused almost exclusively on homeless *individuals* accessing supportive housing. A 2015 study by Abt Associates is novel in its focus on homeless families.²⁰ In their evaluation, nearly 2,300 homeless families in 12 cities across the U.S. were randomly assigned to one of four groups, including three intervention groups—a permanent housing subsidy; a temporary housing subsidy in the form of community-based rapid re-housing; or a temporary, service-intensive stay in a project-based transitional housing facility. A control group received standard services and referrals available to families in shelters.

In their preliminary report, researchers examined a number of outcomes at 20 months following the intervention. Among those outcomes were measures of physical and mental health, trauma, substance abuse and domestic violence. Researchers found modest health impacts for adults in families receiving a permanent housing subsidy.²¹ While the researchers did not attempt to monetize the value of health or any other outcomes in this study, they did compare costs of the three different interventions and the cost of emergency shelter care. They found that after 20 months, the total costs associated

with each of the three interventions were about the same as the cost of usual care—that is, emergency shelter services with rudimentary referrals—and that the permanent housing subsidy led to greater housing stability and to some health benefits among adults.

Housing Plus Home and Community-Based Services

There has been relatively little research measuring and monetizing the health benefits associated with affordable housing programs that target other (i.e., non-homeless) low-income families. One set of potentially relevant research includes studies on how shifting from institutional long-term care to care provided in home and community-based settings can potentially result in cost savings to the Medicare and Medicaid programs.

Because long-term care patients comprise another population of high health care users, the impacts on health care costs can be particularly important. In FY 2013, Medicaid spending on services totaled almost \$440 billion, and more than 30 percent of that spending went to long-term care services. Recent forecasts show that annual federal and state government spending for long-term care services will be between \$132 and \$140 billion by 2020. In an attempt to reduce public costs associated with long-term care for seniors and the disabled, many states have opted to provide health and other services in individuals’ homes or community settings rather than in institutions, such as nursing homes. It is likely that this trend will continue and gain momentum. Home- and community-based services (HCBS) have been one means by which states have attempted to reduce Medicaid costs while meeting patients’ health care needs. HCBS can include intensive case management, personal care services, rehabilitative services, caregiver training, and assistance with accessing housing. Historically, states had to obtain waivers from the federal Medicaid regulating agency, the Centers for Medicare

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and Medicaid Services (CMS), to offer HCBS to Medicaid enrollees. These services were often limited to specific populations or geographies. The ACA now gives states the option to add HCBS to their slate of services offered statewide. This expands the accessibility of HCBS and provides an option to nursing home care to many older adults and individuals with disabilities.

Results from research on the impact on overall Medicare and Medicaid costs of shifting from institutional care to home or community care have been mixed. Furthermore, there are at least two caveats to keep in mind when assessing the existing research. First, many studies do not explicitly address the “woodwork” effect—that is, the effect of leading more people to use health care services by offering long-term care in home and/or community settings. Even if costs were reduced on a per-patient basis, increasing HCBS offerings could actually drive up total Medicaid costs if more people used those services, particularly those who were not at risk of entering a nursing home or other institution for long-term care. Second, most studies fail to include the costs of housing when comparing the costs of HCBS to institutional long-term care. Having access to a place to live—on one’s own, with family members or in a group setting—is necessary for receiving HCBS. Finding safe, affordable and stable housing can be challenging for many low-income seniors and disabled persons, so it is a key consideration when evaluating the cost-effectiveness of HCBS relative to institutional long-term care.

The U.S. Department of Health and Human Services published a report reviewing rigorously designed evaluations from the 1970s and 1980s on the cost-effectiveness of home- and community-based services relative to nursing home care, focusing primarily on evaluations of programs run under Section 1115 Medicaid demonstration waivers that authorized five-year demonstration programs for states to experiment with Medicaid service delivery.²² According to this review,

expanding access to HCBS under the Section 1115 waivers did not reduce aggregate long-term care expenditures and in fact increased them in many cases. The majority of the studies reviewed found that offering HCBS increased the total number of people who used Medicaid-reimbursed long-term care services, including people who never would have entered nursing homes to begin with but opted to take advantage of HCBS—which resulted in the increased aggregate costs.

More recent research, including both state-level²³ and individual-level²⁴ analyses, has generally confirmed that shifting from institutional care to HCBS programs is associated with reduced per-patient health care costs (sometimes after an initial bump in spending) but can increase aggregate long-term costs if programs do not target services specifically to those potential high users of the health care system who are most at-risk of moving into a nursing home.

This cost-effectiveness research on HCBS largely ignores housing costs and some low-income individuals’ need for subsidized housing in order to receive long-term care services at home or in the community. One study was identified that attempted to measure the costs of housing associated with HCBS programs.²⁵ Researchers compared the cost-effectiveness of community-based long-term care relative to institutional care by comparing state Medicaid long-term care costs for states with HCBS waivers to those without waivers. The unique element of this study is that it attempted to measure the public cost of housing associated with providing HCBS. The researchers collected Medicaid data from 2002 and analyzed three different measures of per-participant expenditures: (1) program (e.g., waiver services versus nursing home care); (2) Medicaid (program costs plus other Medicaid expenditures such as physical and prescription drug costs); and (3) estimated total public costs (Medicaid costs plus an estimate of room and board costs using SSI payment data). When compared to the costs of Medicaid

institutional care, the researchers found that HCBS waivers resulted in a national average public expenditure savings of \$43,947 per participant.

Despite the attention to housing costs in this analysis, there are several caveats that should be considered with respect to the findings from this study. First, the researchers noted that some HCBS programs enroll people with lesser needs than those entering institutions, and therefore the level of care—and ultimately the cost of care—will be less than for those receiving long-term care in a nursing facility. Second, the researchers measured per capita expenditures, not aggregate expenditures, and therefore did not take into account any “woodwork” effect that would actually lead to greater overall public expenditures on HCBS relative to institutional care. Finally, the way in which the researchers attempted to measure other public expenditures, including housing, is likely incomplete and may not be an appropriate method.

Research on Other Affordable Housing Programs

Among the most widely known studies on the impact of housing on health and social outcomes for individuals are the evaluations of the Moving to Opportunity (MTO) program.²⁶ The MTO program was a random-assignment experiment that assigned about 4,600 families across five cities to one of three groups—a group that received a **housing voucher** that they had to use to rent a home in a low-poverty neighborhood, a group that received a housing voucher with no location restrictions, and a group that did not receive a housing voucher but remained eligible for any other government assistance programs. A 2011 evaluation examined a number of outcomes, including some health outcomes. Overall, the researchers found that families who lived in lower-poverty neighborhoods had better health

outcomes on some measures. Specifically, women were less likely to be obese and to have diabetes, and women and girls were less likely to have psychological distress and depression, compared with those in the control group. However, this evaluation did not attempt to monetize the health or any other outcomes or to compare the cost-effectiveness of the voucher program with the status quo.

Researchers at the University of California recently examined the health impacts of the **HOPE VI** redevelopment efforts in San Francisco, though there was no attempt to monetize impacts or to calculate relative program costs in this evaluation either.²⁷ This study was conducted specifically to examine the incidence of emergency room visits among children living in housing redeveloped under the HOPE VI program, in non-redeveloped public housing, and in non-public housing located in neighborhoods that contained public housing. Their focus on emergency room visits was at least partially due to the relatively high costs of these visits; the researchers estimated that the average emergency room visit costs two to five times more than a regular doctor’s visit.

Data were compiled from the San Francisco Housing Authority and six city and county hospitals, which accounted for more than 80 percent of all emergency room visits by children in the city and county of San Francisco. Using multivariate statistical analyses, the researchers modeled the frequency of emergency room visits for more than 2,800 children who had public health insurance. Researchers found that children living in non-redeveloped public housing were 39 percent more likely than children living in a HOPE VI development to access repeat emergency care.

The multivariate analyses included covariates that are likely to be predictors of emergency room visits, which allowed the researchers to better isolate the impacts of housing type on this particular kind of health care utilization.

Researchers studying the Moving to Opportunity (MTO) program found that families who lived in lower-poverty neighborhoods had better health outcomes on some measures.

This study did not explicitly monetize the benefits associated with the HOPE VI redevelopment or compare benefits to program costs. However, the results are suggestive of savings, and the authors conclude: “For organizations that want to reduce health care spending, the finding that investments in good-quality public housing could reduce the expensive use of acute health care facilities by children might encourage their involvement in redevelopment efforts.”²⁸

There may be opportunities to quantify and monetize the health benefits associated with other investments in housing for low-income individuals and families. The **Rental Assistance Demonstration** (RAD) program is one potential opportunity for cost-effectiveness analysis. The RAD program allows public housing authorities to convert public housing units to project-based Section 8 contracts, which enables them to leverage public and private investment to rehabilitate and/or

redevelop the units. Under the legislation that approved RAD, HUD is required to assess impacts on existing and future residents affected by the conversion. An evaluation of the current projects being redeveloped and/or rehabilitated under the RAD program is being conducted by Econometrica, the Urban Institute, and EMG Corporation. The five-year study will examine the RAD process and will measure potential impacts of the RAD program on residents; however, in the interim evaluation report, there is no mention of measuring health outcomes.²⁹

The potential health impacts of other affordable housing programs have been assessed in other contexts outside of a program evaluation approach, though there have been no attempts to monetize health benefits or to assess cost-effectiveness. Recently, **Health Impact Assessments** (HIAs) have been gaining attention as a way to more clearly elucidate the pathways through which a housing intervention can impact health and to raise the issue of health impacts prior to program implementation. In 2009, for example, the UC Berkeley Health Impact Group conducted an HIA of the HOPE SF redevelopment in San Francisco to better understand the community’s health needs and to identify opportunities to improve health outcomes during the redevelopment process.³⁰ Other HIAs have been conducted to inform policy and programmatic change to the rental housing voucher program,³¹ and to assess potential health impacts associated with RAD redevelopment,³² changes to local code enforcement regulations,³³ and specific affordable housing developments.³⁴ Because HIAs explicitly make the links between housing and health by identifying specific pathways through which health is impacted by housing quality, location and affordability, they can be an important component of future research monetizing health benefits and analyzing cost-effectiveness of programs.

Affordable family housing at Hunters View, the first phase of San Francisco’s HOPE SF program



Courtesy of Bruce Damonte

Next Steps Towards Integrating Housing and Health

Based on this research review and with insights from other recent analyses of the ACA and expanded Medicaid,³⁵ there are at least two avenues for future work around housing and health. First, given the existing cost-effectiveness research and with expanding opportunities for housing and health care organizations to work together in order to achieve the goals of the ACA, there are steps that can be taken now to better coordinate housing and health care services. Second, there continues to be a need to conduct additional evaluations that quantify the costs and benefits of investments in housing programs, and future research efforts should include new strategies for linking housing and health data.

Work to find ways for the housing and health communities to collaborate on supportive housing programs. A broad set of research has demonstrated that safe and affordable housing can have positive impacts on the physical and mental health of low-income individuals and families, and the most compelling evidence on cost-effectiveness is around housing programs for homeless individuals. Both federal and state governments could save on spending on health care through the Medicaid program if they invested in supportive housing programs, particularly programs that target homeless individuals who are high users of the health care system. The greatest opportunities for cost savings, therefore, involve working for greater collaboration between housing and health providers in permanently housing the homeless population.

There are provisions of the ACA that are particularly relevant for organizations that serve homeless individuals and families that create opportunities to use Medicaid or other health care funds to pay for part of the service portion of supportive housing costs. As of September 2015, 31 states have

expanded Medicaid eligibility, extending Medicaid coverage to low-income, childless adults, which includes much of the homeless population.³⁶ Six additional states have requested Medicaid waivers from the CMS to modify how they administer the Medicaid program. Expanded Medicaid eligibility enables organizations that serve homeless people to better connect them to health services. Enrolling more homeless and at-risk individuals in Medicaid, and receiving Medicaid reimbursement for some of the services offered in supportive housing, will allow supportive housing providers to stretch their limited resources further and utilize Medicaid reimbursements as a sustainable funding source for supportive services.

Currently, the opportunities for using health resources, specifically Medicaid funds, to pay for housing construction and rehabilitation are limited. The health sector recognizes housing as an important social determinant of health, and the changes to the health care system brought about by the ACA incentivize health organizations to address social determinants of health; however, there are no specific provisions to direct Medicaid resources specifically to housing except in limited circumstances to facilitate transition out of hospitals and nursing homes.

In order to comply with the provisions of the ACA and contain public spending on health care, states are restructuring their health care systems in innovative ways to integrate housing and health. For example, under a Section 1115 Medicaid demonstration waiver, New York State is using \$8 billion of anticipated Medicaid savings to invest in several initiatives that support the health of Medicaid beneficiaries. One of these is the Supportive Housing Initiative, which supplies funding to construct or rehabilitate supportive housing designed for high Medicaid users, both homeless individuals and older adults.³⁷ This initiative, which uses state (not federal) Medicaid funding for actual housing construction and rehabilitation, is unique to New York,

The ACA creates opportunities for organizations that serve homeless individuals and families to use Medicaid or other health care funds to pay for part of the service portion of supportive housing costs.

Despite the potential public savings associated with housing high users of health care, operationalizing the funding and policymaking process remains a public policy challenge.

though it could provide a model that might be adopted in other states. New York State health officials are tracking the health care spending on residents in the new and rehabilitated supportive housing. These data could be a useful source of evidence on the effectiveness of supportive housing in reducing health care spending on vulnerable populations and may make the case for more investment of health care funds in housing programs in order to achieve the goals of the ACA to reduce health care spending and achieve better health outcomes.

One of the biggest challenges to using Medicaid dollars for housing is the siloed nature of the funding sources. Despite the potential public savings associated with housing high users of health care, operationalizing the funding and policymaking process remains a public policy challenge. There is no clear path for how to administer the situation when the benefits from spending on one type of public service provided through one public agency (i.e., housing) are accrued to an agency that provides another type of public service (i.e., health), characterized as a “wrong pocket” problem. Because federal and state housing and health agencies generally do not pool resources, there will need to be some agreement over how to share costs and benefits. Therefore, it is important to determine how costs can be paid in one area (for housing or housing support services), when the bulk of the savings from the intervention will accrue elsewhere (especially Medicaid).³⁸

Continue to rigorously evaluate housing programs and include an analysis of health impacts. The links between housing and health have been examined in a number of random-assignment and quasi-experimental studies, but there is a need for more research that replicates findings, examines impacts of specific housing programs and subsidies, and better assesses the types of individuals and families who experience the greatest benefits from housing interventions. In evaluations of affordable housing

programs and policies, researchers should always include measures of outcomes related to physical and mental health and, to the extent possible, provide some assessment of the value of benefits that can be accrued to particular interventions.

Random-assignment experiments are the best way to evaluate impacts of housing programs, and HUD and other federal agencies should continue to fund these types of large-scale evaluations and to include measures of health outcomes. According to Katherine O’Regan, HUD Assistant Secretary for Policy Development and Research, nearly all of the evaluations funded through HUD over the last several years include health outcomes in the analysis.³⁹

When random-assignment experiments are not feasible it is important to evaluate impacts using the best quasi-experimental methods possible. Smaller evaluations, including those conducted not only by evaluation researchers but also by housing providers or advocates, should be conducted using the most rigorous methods possible in order to build a reliable evidence base. Technical assistance to help plan and conduct evaluations would be helpful for organizations that do not have dedicated research and/or evaluation staff and resources.

A key way to make health and spending outcomes easier to identify is to link data on individuals’ housing situations (i.e., their participation in a housing program, receipt of a housing subsidy) and health data (i.e., Medicaid claims/utilization, doctor visits, emergency room usage) and to make that data available to researchers. HUD has adopted a “health in all policies” strategy that promotes collaborations with health organizations, the use of health metrics, and the inclusion of health and social services in its goals and programs.⁴⁰ A recent HUD-sponsored effort demonstrated the feasibility of linking data on HUD-assisted households with Medicare and Medicaid claims data, and using that data for research and analysis.⁴¹

State and local housing and health agencies could work together to collect and combine administrative and survey data and to make datasets available to researchers who are conducting evaluations. The Los Angeles County Department of Public Health conducts a periodic survey of County residents and includes questions about housing affordability, homelessness and housing quality.⁴² While there are no questions about participation in specific housing programs, it may be possible to add questions if there is interest in an evaluation of a local housing intervention.

Los Angeles County has also developed an integrated administrative data system that links health, public housing and general relief (cash assistance) data of residents of the County.⁴³ The developers of the database noted that linking data is a complex process and that the linked data alone are not sufficient. Researchers need to be trained on how to use and accurately represent findings from analyses based on the data, and funding needs to be available to develop and properly maintain an integrated data system. With the increased focus on reducing health care costs and greater understanding of housing as a key social determinant of health, housing providers are well-positioned to make the case to health care organizations that sharing their data and supporting data integration and maintenance efforts can help them better target their services and meet their goals.

Beyond the incentives under health care reform, the general policy environment suggests that analyzing return on public investment will be increasingly important in the program funding discussion. Many policymakers need this “bottom line” rationale for committing resources to housing programs for low-income households. With reductions in federal funding for housing programs specifically, and social programs generally, being able to demonstrate program cost-effectiveness provides a better position to advocate for funding.

Endnotes

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