BIPARTISAN POLICY CENTER

HUD-HHS Partnerships: A Prescription for Better Health

Introduction

Among the most important public health findings over the last two decades has been that there are a number of factors, beyond medical care, that influence health and contribute to premature mortality. The Bipartisan Policy Center has worked extensively to highlight the importance of one such factor—safe, affordable housing—recognizing that the integration of health and housing has the potential to improve health outcomes and reduce costs borne by the health care system.

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There are many ongoing and productive partnerships between the Departments of Housing and Urban Development (HUD) and Health and Human Services (HHS) at this nexus of health and housing. Generally, these collaborations help the departments to break down their siloed decision-making, more fully capitalize on their respective expertise, maximize limited funding, and more efficiently and impactfully fulfill both their missions. Yet their work is far from finished; pressing challenges make continued and close collaboration between the two departments during the Trump administration more important than ever.

To stress the benefits of these partnerships and support their prominence in the Trump administration's policy agenda, this white paper:

- Outlines existing collaborations between HUD and HHS;
- Identifies the two departments' overlapping goals; and
- Elevates a few overarching priorities, which, based on BPC's research and outreach, appear ripe for action.

Despite the primary focus of this paper on effective partnerships between HHS and HUD, their collaborations frequently involve, and benefit greatly from, the contributions of other federal partners. Many of them are highlighted throughout this report, including the Department of Agriculture (USDA), Department of Veterans Affairs (VA), Department of Energy (DOE), Environmental Protection Agency (EPA), and Federal Emergency Management Agency (FEMA). Moreover, interagency coordination is both prevalent and necessary throughout the federal government.

The focus on HUD and HHS should also not minimize the importance of another critical stakeholder: Congress. Many of the recommendations made in this white paper do not specifically cite items for congressional action, but Congress is equally critical in furthering health-housing integration. In either working together or not, the mix of congressional committees responsible for authorizing and funding HUD and HHS can help or hinder the work the two departments are doing together. Our ultimate intent in this white paper is to highlight the importance of HUD-HHS partnerships in furthering the integration of health and housing. Ensuring that the committees in Congress that set the parameters for what HUD and HHS can achieve is, therefore, undeniably part of this effort.

This work is the product of extensive input from health and housing stakeholders, practitioners, and policy experts. Importantly, it is also a compilation of the helpful guidance we have received from countless HUD and HHS staff members in recent months—including current career staff and political appointees as well as a bipartisan advisory group of former HUD and HHS officials. Together, they have helped us explore how new interagency partnerships might advance the goals and priorities of the two departments' new leadership teams.

Background

The value of HUD-HHS collaboration lies in the fundamental relationship between health status and safe, affordable housing. It also stems from the growing consensus that reforms to America's health care system must, in part, work to slow rising costs and improve the quality of care delivered to patients. Health care leaders are increasingly cognizant of the fact that the key drivers of health lay outside the walls of a clinical setting. From a federal budget perspective, improving the coordination of discretionary social spending—including investments in safe, stable housing—can contribute to decreased hospital utilization and better health outcomes, ultimately reducing spending to programs like Medicaid and Medicare. This is critical given the contribution of health care spending to growing deficits and the debt.

Shown in Table 1, annually appropriated resources represent a very small portion of the HHS budget but a large portion of the HUD budget. As such, improving the coordination of annually appropriated program expenditures could impact total spending at HHS by reducing needed expenditures for mandatory—and costly—health programs. While a dollar investment in HUD spending does not always produce an equivalent dollar in health savings, ongoing HUD-HHS partnerships and related studies have shown that, at times, savings do materialize.[1] Furthermore, given the departments' often overlapping priorities, better coordination of spending is essential to being good stewards of taxpayer dollars.

Table 1. Federal Funding for the Departments of Health and Human Services, and Housing and Urban Development (Budget Authority Dollars in Billions)

	FY2000	FY2017	% ANNUAL RATE OF INCREASE
HHS			
Total	$392	$1,144	6.5%
Discretionary	$45	$88	4.0%
HUD			
Total	$24	$61	5.5%
Discretionary	$21	$44	4.4%

Source: White House Office of Management and Budget, Historical Tables.

The budget case for HUD-HHS partnerships is further proven by a growing body of research demonstrating the health benefit of safe, affordable housing, as well as housing-based interventions and services. While reviewing the entirety of this literature is not possible in this white paper, it is worth highlighting what some of this work has taught us.

Evidence shows that unmet housing needs can have a direct and deleterious impact on physical and mental health. Yet these needs and their connection to health take many different forms.

For example:

- *Homelessness or housing insecurity:* Those experiencing homelessness are more likely to experience severe and frequent mental and physical illness.[2] Chronic illness is also a risk factor for homelessness.

- *Substandard housing quality:* Hazards within the home environment, such as lead paint and asthma triggers, can cause or exacerbate health conditions.

- *Inability to pay rent or a mortgage (i.e., rent burdens):* High housing costs are not only stressful, they can force struggling families to make difficult trade-offs between buying necessities like food and medicine and paying their rent, resulting in suboptimal health outcomes. In addition, what a household can afford often dictates where they can live. High housing costs can limit low-income families to communities with high crime or disproportionate environmental burdens, leading to poor health and premature mortality.

Housing needs, left unaddressed, are a strain on our health care system. For example, the top 5 percent of hospital users—overwhelmingly poor and housing insecure—are estimated to consume 50 percent of health care costs.[3] As such, many in the health care sector—including payers, hospitals, and clinicians—are increasingly seeing the potential of the home as a platform for health and wellness services and as an essential tool in chronic care management. We also know now that expenditures to improve access to safe, affordable housing can materially improve population health. Studies have clearly demonstrated the positive health effects of many housing-based interventions, including those, for example, that improve insulation and energy efficiency, provide greater accessibility, reduce mold and dampness, eliminate pest infestations, and abate lead.[4]

Though there is considerable evidence showing that investments in safe, affordable housing benefit health—and can prove highly cost-effective—some policy experts and housing advocacy groups have expressed concerns about the overall adequacy of federal support. Most recently, some have predicted that the Tax Cuts and Jobs Act, passed by Congress in December 2017, will make low-income housing tax credits less attractive and result in reduced affordable housing development. Others discerned a lack of support for key priorities—such as repairing the aging stock of public housing—in President Trump's fiscal year 2019 budget.

However, Congress appropriated $42.7 billion in net discretionary funding for HUD in the FY2018 Consolidated Appropriations Act,[5] a 10 percent increase over FY2017, which will give the administration some additional resources to address the mismatch between growing demand for suitable, affordable homes and scarce supply. In 2015, there were 11.3 million "extremely low-income" renter households (households at or below 30 percent of the area median income) competing for 4.3 million affordable and available rental homes, resulting in a shortfall of 7 million homes.[6]

By one estimate, the federal government spent $190 billion in 2015 to help Americans buy or rent homes.[7] Yet such subsidies are not well-targeted to those with the greatest need, a problem highlighted prominently by BPC's Housing Commission in its report, *Housing America's Future: New Directions for National Policy.*[8] About 3.7 million extremely-low income households and 5.6 million at all income levels received some HUD assistance in 2015.

About half of the 44 million renter households in the United States paid more than 30 percent of their income on rent. The most severely burdened households face difficult choices every day between paying for rent, utilities, food, medical care, and other necessities. Rising rents as well as any income disruption—such as from a job layoff, medical problem, death in the family, or other tragedy—can lead to homelessness. In fact, research has confirmed the strong and predictive relationship between rising rents and increases in those experiencing homelessness.[9] While existing resources allow HUD to provide rental housing assistance to approximately 5 million households and 10 million low-income individuals, such assistance reaches only one in four households that qualify.[10]

Simply put, the United States is in the midst of a severe shortage of safe, affordable, and accessible homes. The result is overcrowding, displacement, and homelessness, putting the health and well-being of America's most vulnerable families in jeopardy. Even with existing rental assistance, 4 out of 10 very low-income renters do not have access to affordable and available homes.[11] A legacy of discrimination, segregation, and inequity across the country has further limited housing opportunities, particularly for communities of color and people with disabilities.

Though the focus of this white paper is on the potential benefits of interagency collaboration, it is important to note that such measures will not achieve their fullest potential without a national response to the affordability crisis. Both the BPC Housing Commission and Senior Health and Housing Task Force recognized the alarming scarcity of safe, affordable, and physically suitable homes. Citing the importance of housing and its impact on health, they called for a comprehensive and sustained national effort to grow the supply of affordable rental homes and reforms to ensure that federal housing subsidies target those most in need.

Helping Americans experiencing homelessness find a safe, stable place to call home is also at the very heart of HUD's mission and has long been an interagency priority. Despite the steady progress made in recent years, the affordability crisis has pushed homelessness back to the fore. Even with continued progress in some states, as shown in Figure 1, homelessness jumped in 2017 nationally for the first time since 2010, to over 553,000 people, as counted on a single night. HUD has estimated that 1.4 million people accessed shelters throughout 2016.[12]

Figure 1. Percent Change in Total Homelessness, 2016-2017
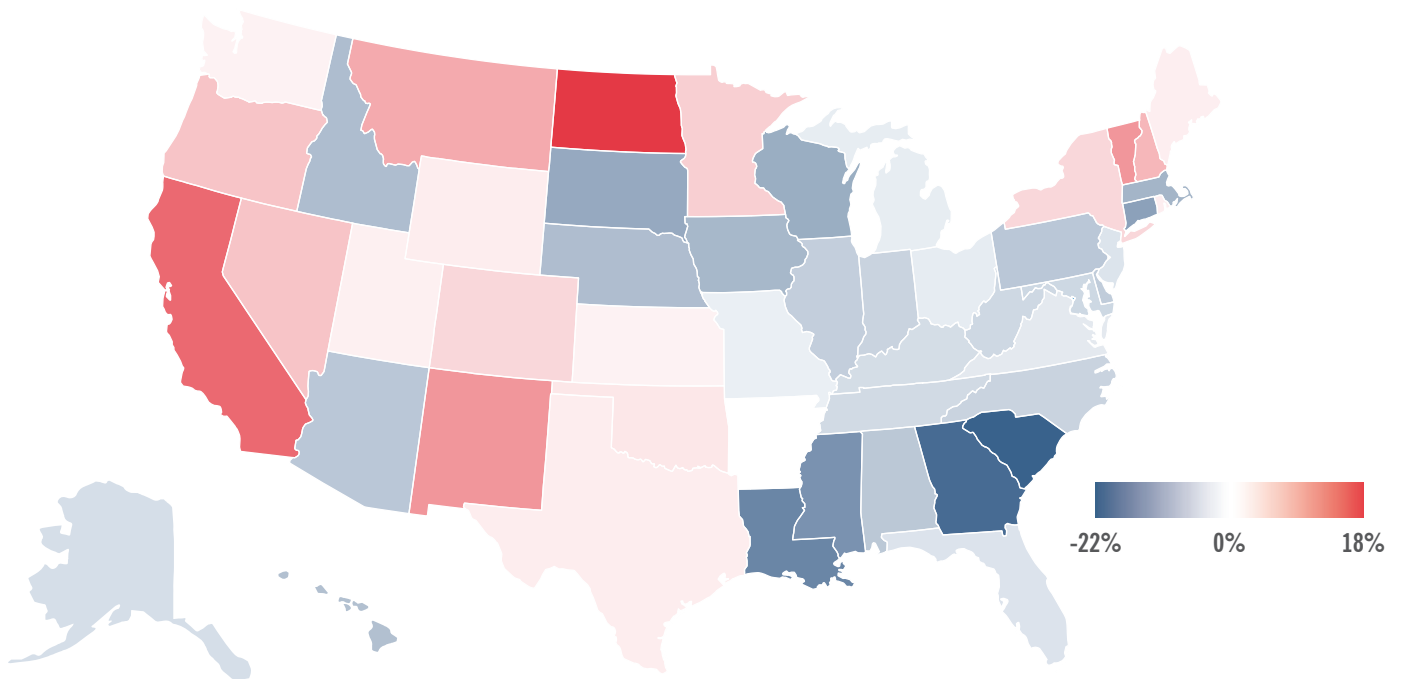
Source: HUD, "2017 AHAR: Part 1 - PIT Estimates of Homelessness in the U.S.," December 2017.

This widespread housing insecurity is a growing public health problem in communities across the United States. The severity of the situation demands enhanced interagency collaboration—the focus of this white paper. Ultimately, as two departments on the front line of this crisis, HUD and HHS are critical in making the case within the administration that putting additional federal resources toward safe, affordable housing is an investment worth making.

Successful HUD-HHS Partnerships

Though addressing the lack of affordable housing supply is the most pressing challenge at the nexus of health and housing, partnership opportunities between health and housing policymakers and practitioners are more important than ever. The upside of a more integrated approach to health and housing is significant: by more tightly linking the two, policymakers can work to improve health outcomes and quality of life for vulnerable Americans, while more efficiently allocating limited federal resources.

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To their credit, HUD and HHS already work together in countless ways for their mutual benefit, coordinating their work or formally collaborating on projects and programs. From weekly calls to annual conferences to interagency working groups, the first phase of our outreach effort—to better understand ongoing partnerships, including their challenges and successes—showed the great lengths to which HUD and HHS strive to break down silos and fulfill their missions. While such partnerships and collaborative efforts come in many different forms, at the heart of them all are several key goals:

- To promote informed, cross-discipline decision-making;

- To capitalize on each department's respective expertise;

- To more efficiently allocate limited federal resources;

- To improve the operations of existing programs; and

- To secure the most optimal health and economic outcomes for their served populations.

HUD-HHS partnerships have taken many forms but typically focus on one or more of the following elements: (1) an evidence-based program, (2) training and education, (3) research, (4) policy, and (5) surveillance. Table 2 provides an overview of a few model partnerships to-date, incorporating a range of these five partnership elements and focusing on different issues at the housing-health nexus.

Table 2. Model HUD-HHS Partnerships

Health Surveys Data Linkages *Key Elements:* *Research; Surveillance*	HUD's Office of Policy Development and Research has an MOU with the National Center for Health Statistics (NCHS) to geocode their survey datasets and link administrative records for HUD-assisted individuals with respondents to the National Health Interview Survey and the National Health and Nutrition Examination Survey. These national surveys provide information on a range of health indicators, including health status and access to health care. HUD and NCHS prepare reports on both the data-matching process and findings. The two entities continue to identify priority research questions that they can jointly investigate.
Annual Departmental Cross-Training *Key Elements:* *Training and Education*	For the past eight years, HUD and HHS have hosted a convening and training session to bring staff together, provide an education forum on health-housing issues, and seed new collaborations. These conferences are an important and low-cost opportunity for department staff to meet each other, build relationships, and brainstorm new opportunities to work together.

United States Interagency Council on Homelessness (USICH) *Key Elements: Training and Education; Policy*	USICH was authorized by Congress in 1987 to coordinate a federal response to homelessness among federal agencies—including HUD and HHS. To achieve its mission, USICH sets goals with its member federal agencies; provides on-site technical assistance; facilitates an ongoing dialogue between the leadership teams of its member agencies to better coordinate policies, programs, and data; and convenes strategic interagency working groups. In recent years, such efforts have contributed to, for example, a 14 percent reduction in overall homelessness nationwide and a 47 percent reduction in veteran homelessness between 2010 and 2016.
Healthy Homes Work Group *Key Element: Policy*	The federal Healthy Homes Work Group formed as part of the President's Task Force on Environmental Health Risks and Safety Risks to Children. HUD and HHS, along with other federal departments like the EPA, USDA, and DOE, convened to develop a comprehensive interagency strategy, including goals and priorities based on group consensus, in healthy housing. Their strategy document was released in 2013.
Integrated Wellness in Supportive Housing (IWISH) *Key Elements: Evidence-Based Program; Research*	HUD awarded $15 million to select owners of HUD-assisted senior housing developments in January 2017—part of an ongoing demonstration program in which HUD covers costs related to hiring a full-time enhanced service coordinator and a part-time wellness nurse. The demonstration aims to better connect older adults in HUD-assisted housing with supportive services. It is the product of several collaborative research initiatives between HUD and HHS, particularly a study linking HUD administrative data with Medicare and Medicaid claims data. The study confirmed that HUD-assisted residents were more likely than unassisted older adults to: (1) be dually eligible for Medicare and Medicaid, (2) have multiple chronic conditions, and (3) have higher average Medicare per-member per-month costs. An evaluation of the program will test whether its enhanced supportive services model can prevent unnecessary, costly health utilization (such as emergency room visits and hospitalizations) and allow HUD-assisted older adults to avoid early transitions to institutional care.
Section 811 Project Rental Assistance (PRA) Demonstration *Key Element: Evidence-Based Program*	Section 811's PRA demonstration has provided nearly $250 million in two rounds of funding—in February 2013 and March 2015—to state housing agencies for rental assistance to extremely-low income persons with disabilities. In releasing the notices of funding availability (NOFAs) for the program, HUD worked collaboratively with HHS, which provided critical feedback on the NOFA and assisted HUD in reviewing applications. Moreover, the importance of health-housing partnerships is enshrined in the NOFA and distribution of funds; successful Section 811 PRA program applications were required to have interagency partnership agreements between state housing, Medicaid, and health and human services agencies, creating a formal structure for state agencies to collaborate on identifying and reaching out to target populations, and providing the appropriate services for residents.

Importantly, these collaborations have collectively helped to demonstrate that health-housing integration and its attendant benefits are worth dedicated time and resources. Each of the partnerships cited in Table 2 also benefitted from a definitive problem they sought to solve for, broad buy-in from participating agencies, and—when necessary—high-level engagement, support, or direction from either the departments' leadership teams or the White House.

Interagency Priorities and Recommended Partnerships

In any administration, given limited resources, limited time, and a host of pressing challenges, only certain priorities can rise to the top. To better understand the priorities of the new leadership teams in HUD and HHS, we conducted dozens of interviews with housing and health experts, stakeholders, and HUD and HHS staff—career and politically appointed. We also relied on the input of a bipartisan advisory group of former HUD and HHS leaders.

In addition to this qualitative outreach effort, the departments' strategic plans and President Trump's proposed 2019 budget also provided us with a guide to the administration's key priorities. For FY2019, the president requests $1,216 billion for HHS and $42 billion for HUD. The requests reflect strategic and analytical input from across the two departments. From these sources, we have identified the following process and programmatic areas as the most promising partnership opportunities:

PROCESS IMPROVEMENTS

1. **LEADERSHIP AND RESOURCES**
2. **DATA SHARING**

PROGRAMMATIC COLLABORATIONS

1. **INTEGRATION OF HOUSING AND BEHAVIORAL HEALTH**
2. **HEALTHY HOMES**
3. **DISASTER PREPAREDNESS, RESPONSE, AND RECOVERY**
4. **HEALTHY AGING**

PROCESS IMPROVEMENTS

Building on past collaborations, HUD and HHS should actively aim to expand collaborations in order to achieve improved health and housing outcomes. Facilitating new and expanded collaborations will require leadership, resources, and data sharing. There are a variety of actions that both HUD and HHS should take to improve health and housing collaborations.

1. LEADERSHIP AND RESOURCES

The most impactful interagency collaborations start with engagement from the most senior positions in each department. The time of a department's secretary is a resource in and of itself, and the issues on which a secretary chooses to focus can set the tone for the rest of the department. Fostering a culture that actively encourages interagency collaborations is a crucial component. However, following through on the aspirations of a department's leadership also requires a commitment of personnel and financial resources. Establishing a dedicated staff and targeted funding for new initiatives can avoid the risk of displacing the department's existing priorities, which can occur when new initiatives are added on top of an office's prior workload without adequate support.

Recommendations:

To solidify the importance of the ongoing collaborations between HUD and HHS, the two secretaries should commit to regularly occurring meetings. Through these meetings, the HUD and HHS secretaries can lead by example and reinforce the important role that these departmental collaborations have in advancing their respective missions within the health and housing nexus. Beyond enhancing federal coordination, this action would also benefit states as previously recommended by the National Academy for State Health Policy.[13] As states and localities attempt to meet the needs of vulnerable populations through facilitating health care and housing, they require a federal partner that is itself aligned and coordinated to help meet their programmatic and policy goals.

In addition to the attention of each department's leadership, HUD and HHS should designate departmental liaisons or offices, with adequate resources, focused on advancing interdepartmental health and housing collaborations. Successful collaborations require staff time and a budget, otherwise productive initiatives can risk falling to a lower priority level or stall altogether. To this end, creating a "joint planning and development office" between HUD and HHS could provide a high-level and systematic platform for the articulation, budgeting, and organization of health and housing operations.[14]

2. DATA SHARING

Between the various programs operated by HUD and HHS, an immense amount of data is being collected on the housing and health conditions of the U.S. population. Matching and utilizing that data across programs is crucial to better aligning health and housing services and ensuring that federal investments are efficiently targeted to achieve the best results.

Data Sharing Example

In 2014, HUD and HHS explored the potential for HUD-assisted properties to serve as a platform for managing the health services of low-income older adults.[15] By creating a new pilot dataset that linked HUD tenant data with Medicare and Medicaid claims (CMS administrative data), the study found that 93 percent of HUD-assisted older adults matched to Medicare and 68 percent were dually enrolled in Medicare and Medicaid. The study also found that HUD-assisted, dually enrolled individuals had a higher rate of chronic conditions than the average unassisted dual individual.

Today, variances in the numerous housing and health datasets make it particularly challenging for the departments to efficiently and cost-effectively connect resources with those who would benefit most, despite serving overlapping populations. For example, through HUD's Continuum of Care program, local providers of homeless services are provided with toolkits and recommendations on the best data sharing and data matching practices.[16] This local data is gathered into the Homeless Management Information System (HMIS), providing a snapshot of the housing assistance and services that are provided to individuals experiencing homelessness, families experiencing homelessness, and those at-risk of homelessness. This data is collected and utilized to varying degrees by a variety of federal programs, including HUD-VA Supportive Housing and HHS' Temporary Assistance for Needy Families program. HMIS data is also utilized by vendors and program grantees at the state and local levels.

Of the more than 1.4 million people reported to experience homelessness in 2016, many are eligible for Medicaid. Therefore, there is significant potential to reduce costs and improve services by matching local HMIS data with state Medicaid programs and managed care plans.[17] States such as Washington and Texas have developed integrated Medicaid and HMIS datasets to better inform their health and homelessness services. Unfortunately, due to the localized nature of the Continuum of Care program, the methods and sources for HMIS data collection vary widely across the country.[18] In order to maximize the utility of HMIS data and create a uniform dataset, HUD would need to rectify these differences.

Beyond HMIS data, several partnerships are already in place to match HUD and HHS datasets in order to empower new initiatives. A collaboration between HUD and the NCHS, housed in HHS' Centers for Disease Control and Prevention (CDC), linked the National Health Interview Survey and the National Health and Nutrition Survey from 1999 – 2012 with HUD's administrative data, including the housing choice voucher data, public housing, and privately owned multifamily housing. This data linkage between the principal agency providing health statistics and the nation's largest federal housing assistance programs has allowed for increased research on the connection between housing and health, including a detailed study of the prevalence of health conditions and healthcare utilization among HUD-assisted populations.[19]

As the Robert Wood Johnson Foundation's Data Across Sectors for Health (DASH) initiative has demonstrated, sharing and utilizing multi-sector data across health and social services is a growing trend at the state and local levels, and is an increasingly powerful tool for improving program outcomes.[20] Continuing to elevate local successes and advancing data sharing initiatives between federal health and housing datasets should be a priority for the administration.

Recommendations:

Building off successful data-matching collaborations, HUD and HHS should expand the data matching process by launching an initiative that focuses on aligning and connecting local housing data with state Medicaid data. For example, aligning the HMIS data of local housing-related service providers with a state's Medicaid data, can lead to more efficient systems that are enabled to make data-driven decisions, and to better connect at-risk populations with available services.[21] While both agencies have led previous, localized programs to this effect, a formal data collaboration initiative between HUD and HHS could expand previous efforts, and better evaluate both local and federal opportunities to match datasets that overlap the health and housing nexus.

Additionally, to further the potential advancements that could emerge from an interagency national data-matching initiative, HUD and HHS leadership could establish an external Research Advisory Board of academics and stakeholders. With assistance and feedback from the board, the interdepartmental staff can better evaluate newly matched datasets for further research and potential applications. An external Research Advisory Board would also serve as an advisory body for new data collection opportunities.

PROGRAMMATIC COLLABORATIONS

1. INTEGRATION OF HOUSING AND BEHAVIORAL HEALTH

Research has shown that high-quality, intensive case management, counseling, coaching, and supportive service models can have positive impacts on individual outcomes.[22] The combination of housing assistance and supportive services, typically tailored according to an individual's needs, help combat the disabling and impoverishing impact of certain health conditions, while providing a stable, accessible platform for treatment and long-term recovery.

Evidence has shown that the combination of stable, affordable housing and individualized social services best supports health and well-being, particularly for those coping with severe mental illness, trauma and abuse, substance use disorders, and chronic illnesses like HIV/AIDS. In fact, providing housing assistance and coupling it with supportive services has become standard practice in ongoing efforts to end homelessness in this country. Research studies have found that this model not only produces the best health outcomes, but also saves money. Taxpayer costs associated with chronic homelessness can reach more than $35,000 annually as a result of cycling through hospital emergency departments, treatment programs, prisons, and psychiatric institutions.[23] According to the National Alliance to End Homelessness, average service costs are reduced by about 50 percent when the individual is placed in supportive housing—with a per unit average cost of $12,800 annually.[24] Compared to the all-in costs of serving a chronically homeless person, supportive housing—with services—saves taxpayers roughly $4,800 per year over conventional approaches.[25]

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Mental health conditions and substance use disorders—which both fall under the umbrella of behavioral health—are often disproportionately prevalent among homeless populations and have been shown to be both a symptom of homelessness as well as a causal factor in becoming homeless. Especially for those with the most severe mental health conditions and substance use disorders, HUD—along with partners like HHS and USICH—has elevated the "housing first" approach, which first prioritizes providing people with stable, long-term housing without conditioning entry into treatment programs. Connecting those with housing instability to Housing First programs and supportive services affords them a greater opportunity for recovery. Moreover, such supportive housing programs reduce the need—and therefore resources required—for emergency medical services, police, correctional institutions, homeless shelters, and other public services.

Over the years, there have been many notable and beneficial collaborations between HUD and HHS, particularly in directing assistance to those facing housing insecurity or homelessness and severe mental health conditions and substance use disorders. Yet both departments face new challenges and can find common ground in better connecting housing with two of HHS' most pressing priorities: responding to the opioid epidemic and better supporting mental health care.

Opioid Overdose Epidemic

The opioid overdose epidemic is now one of America's foremost health crises and one of the highest priority agenda items for federal and state policymakers. Data from CDC shows that opioids (including prescription opioids, heroin, and fentanyl) were involved in the deaths of more than 42,000 people in 2016. The age-adjusted rate of drug overdose deaths involving illicit fentanyl doubled from 2015 to 2016.[26] In response, policymakers from across the political spectrum have sought new ways to curb the illicit supply, reduce opioid overprescribing, increase access to treatment, and promote recovery supports.

Evidence has shown that individuals with opioid use disorders have an increased risk of housing instability. For example, a study in Boston found that drug overdoses—81 percent of those from opioids—are the leading cause of death among individuals experiencing homelessness in the city.[27] Individuals experiencing homelessness in the study were also nine times more likely to die from an overdose than those who were stably housed—highlighting the importance of stable housing to treatment and recovery.

Since taking office, coordinating a federal response to the opioid crisis has been a high-priority item for the administration, and an effort that has included the President's Commission on Combating Drug Addiction and the Opioid Crisis along with a host of other initiatives. The subject has also been a top concern for Congress, as it has held dozens of hearings and deliberated on how to provide adequate funding in response to the epidemic.

Recommendations:

HUD and HHS should identify public housing complexes with high overdose rates and encourage local law enforcement to carry naloxone, a medication designed to rapidly reverse opioid overdose. HUD and HHS could provide training and funding for such a pilot program allowing first responders to carry naloxone. In addition, given the Surgeon General's recent Advisory on Naloxone and Opioid Overdose, making naloxone available in public housing to health care practitioners as well as family and friends of people who have an opioid use disorder could increase access to this life-saving medication.[28]

HUD and HHS should jointly explore increasing recovery housing options in communities with high rates of opioid use disorder. Recovery Housing provides support for individuals who seek to live in a community where they can be supported in their recovery from substance use disorders with services, as well as other peer supports.

In its fiscal year 2019 budget proposal, HHS requested funding for community health centers for quality improvement efforts that utilize evidence-based models to support behavioral health, including opioid addiction, and address the needs of the populations they serve. This new funding, for example, may present an opportunity to evaluate and support recovery housing models linked to community health centers.

Coordination is needed between HUD and HHS to ensure that qualified health care practitioners in the Public Housing Primary Care program have waivers to prescribe buprenorphine to individuals with opioid use disorders. (The Public Housing Primary Care program provides health care in public housing developments.[29])

Severe Mental Illness

According to HHS, in 2016 roughly 1 in 25 adults in the United States, age 18 and older, battled serious mental illness, such as a psychotic or major depressive disorder.[30] In addition, in January 2016, one in five people experiencing homelessness had a serious mental illness, and a similar percentage had a chronic substance use disorder.[31] Along with a request for $10 billion in funding for activities to address serious mental illness and the opioid epidemic, President Trump's 2019 budget request for HHS notes the importance of early interventions to treat mental illness, including among youth with or at risk of developing a serious mental illness, noting they are significantly more likely to experience homelessness.[32]

Stable housing is an important piece of any comprehensive treatment program, particularly when recovery support services are needed for those with co-occurring mental illness and substance use disorders.

Recommendations:

There is a growing recognition that housing is a prerequisite for effective treatment and long-term recovery. For people with serious mental illness or serious emotional disturbance, providing adequate housing is becoming a standard part of recovery-oriented treatment. Consistent with recommendations from HHS' Interdepartmental Serious Mental Illness Coordinating Committee, HUD should consider issuing guidance for state and local housing authorities on establishing tenant selection preferences for non-elderly people with severe mental illness, consistent with federal fair housing requirements. HUD should also consider targeting resources such as Housing Choice Vouchers for individuals with severe mental illness experiencing chronic homelessness or transitioning from settings such as correctional facilities, nursing homes, or board and care homes.[33]

HUD and HHS should jointly study the feasibility of a pilot program in which patients with severe mental illness at Federally Qualified Health Centers are screened for housing insecurity and prioritized for housing vouchers, consistent with federal fair housing requirements.

2. HEALTHY HOMES

Both HHS and HUD recognize that the home environment impacts both population and individual health in profound ways. Children are particularly vulnerable to home hazards. Two specific hazards include lead exposure and asthma triggers. HHS and HUD both have programs dedicated to the prevention of lead poisoning and asthma exacerbations. The following sections summarize existing departmental efforts and opportunities for enhanced collaboration in these two areas.

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"Children are particularly vulnerable to home hazards."

Lead Poisoning Prevention

With respect to lead, children in at least 4 million U.S. households are exposed to high levels of lead from paint, water, and soil. There are also approximately half a million U.S. children ages 1-5 with blood lead levels above 5 micrograms per deciliter (ug/dL), the reference level at which CDC recommends public health actions to prevent or mitigate exposure. Lead prevention matters because research indicates that lead in a child's blood is associated with behavioral and learning problems and can affect IQ, the ability to pay attention, academic achievement, and many other adverse health outcomes.[34]

According to the Pew Charitable Trusts, eliminating all lead exposure would also avoid health and financial harms to families and future generations thereby yielding at least $84 billion in discounted future benefits per birth cohort. Of these benefits, the federal government and states would realize approximately $19 billion and $10 billion respectively, in the form of increased tax collections and lower health care, education, and safety net expenditures for the children born in 2018 alone.[35]

In HUD's Strategic Plan for 2018-2022, one of its strategic objectives is to remove lead-based paint hazards and other health risks from homes.[36] Similarly, HHS' 2019 budget affirms that, "CDC will remain committed to the goal of eliminating elevated blood lead levels in children in the U.S. as a major public health problem by 2020."[37]

CDC's Childhood Lead Poisoning Prevention Program helps prevent childhood lead exposure in several ways, including through gathering surveillance data that trigger actions to protect children. For example, HUD uses CDC lead surveillance data to identify housing properties where children are experiencing lead poisoning.[38] HUD's Office of Lead Hazard Control and Healthy Homes provides funds to state and local governments to reduce lead-based paint hazards and enforces HUD's lead-based paint regulations. All children enrolled in Medicaid are required to receive blood lead screening tests at ages 12 months and 24 months. Medicaid provides coverage for lead screening and also provides reimbursement for lead investigation in the home of a child with an elevated blood lead level.[39] Additional HHS operating divisions also have roles in lead poisoning prevention.

Recommendations:

CDC's National Center for Environmental Health, CMS' Center for Medicaid & CHIP Services, and HUD's Office of Lead Hazard Control and Healthy Homes should initiate a strategic dialogue to better coordinate activities related to surveillance of lead poisoning, diagnosis and treatment of children with elevated blood lead levels, and prevention of lead poisoning. While a catalog of federal programs to reduce childhood lead exposures and eliminate associated health impacts was produced in 2016, the last federal strategy to eliminate childhood lead poisoning with a set of coordinated recommendations and funding was released in 2000.[40]

As part of the dialogue, the agencies should consider the following specific actions:

- Coordinate blood lead level surveillance efforts to support CDC and HUD's respective goals.

- Coordinate activities between CDC and HUD to improve surveillance of housing conditions across all 50 states to better target geographic areas and types of housing with high lead home contamination and elevated blood lead levels.

- Launch a public-private partnership to replace lead-contaminated windows in pre-1940 housing. HHS' Low Income Heating Assistance Program (LIHEAP) could be a partner to HUD in this effort. Windows have the highest lead paint and lead dust levels compared to other building components and replacement provides energy savings and increases home value.

- Encourage public housing authorities to conduct testing of soil for lead in properties with histories of lead-based paint, with such testing being explicitly identified as eligible for funding through HUD's Lead Hazard Reduction Program and Healthy Homes Initiatives programs.

- Work with state Medicaid agencies to submit timely and accurate data to CMS on the number of blood lead screening tests and positive blood lead screening tests; require Medicaid managed care plans to report on lead screening quality metrics; and support lead investigations, screenings, and follow-up services.

- Improve states' awareness of regulatory flexibilities to augment efforts. As an example, Rhode Island's Medicaid program covers window replacement for children with lead poisoning under its Section 1115 waiver[41] and Michigan's Medicaid program pays for lead abatement services through a CHIP health services initiative.[42] Beyond waivers, state Medicaid agencies could also use value-based purchasing contracts with managed care plans to incentivize, finance and scale evidence-based healthy housing interventions. Managed care plans could also pay for these interventions out of their administrative funds.

Asthma Prevention

Six million children, or 8.4 percent of kids in the United States, live with asthma, making it one of the most common chronic childhood diseases, and a leading cause of school absenteeism.[43] Environmental triggers for asthma flares include allergens such as dust mites, mold, and cleaning chemicals. It is estimated that 46 percent of pediatric asthma patients have poorly-controlled asthma.[44] The consequences of poorly-controlled asthma for children and adults are that each year, over 11.5 million Americans suffer an asthma exacerbation, 1.6 million visit the emergency department for asthma, and 439,000 are hospitalized.[45] The United States was estimated to spend nearly $63 billion on asthma.[46] Fortunately, home-based asthma interventions are cost-effective, yielding significant return on investments for every dollar invested.[47]

CDC's National Asthma Control Program provides surveillance data at the national and state levels to public and private sector partners in addition to training health professionals in providing evidence-based care and educating individuals with asthma and their families. Through HUD's Healthy Homes Demonstration Grant Program, public and private sector grantees carry out remediation where housing-related hazards may contribute to children's diseases and deliver education and outreach activities to protect children from housing-related hazards. Medicaid provides several pathways for states to reimburse pediatric asthma services.

Recommendations:

CDC's National Center for Environmental Health, CMS' Center for Medicaid & CHIP Services, and HUD's Office of Lead Hazard Control and Healthy Homes should begin a dialogue to better coordinate activities related to surveillance of asthma exacerbation "hot spots" and targeted remediation of homes to reduce environmental triggers.

HUD's Healthy Home grants should be coordinated with local public health and state Medicaid program efforts to reduce asthma environmental triggers. Case management of asthma cases should enable housing remediation when appropriate.

CMS should develop an informational bulletin to clarify for states the various pathways to Medicaid reimbursement for pediatric asthma services. This could include options such as the use of 1115 waivers and CHIP amendments, Medicaid "health homes," social impact financing, managed care contracts that promote community-based asthma interventions, and new payment and delivery system reforms.[48] With respect to new reimbursement models, for example, Massachusetts is currently piloting a Children's High-Risk Asthma Bundled Payment Demonstration Program which allows for home visits, care coordination by community health workers, supplies to reduce environmental triggers (like vacuums, air filters, bedding, and pillows), and pest management supplies and services. Arkansas is also allowing for non-clinical services through its bundled payment and medical home initiatives.[49]

3. DISASTER PREPAREDNESS, RESPONSE, AND RECOVERY

When a natural disaster occurs, it can strike at the heart of a community's health care and housing resources. During 2017, there were 16 separate natural disasters that each wrought over a billion dollars in damage in the United States. Combined, they are estimated to have caused at least $300 billion in total damage.[50] Official estimates have tallied 362 deaths that resulted from these 16 events, though reporting out of Puerto Rico suggests that as many as 1,052 people died as a result of Hurricane Maria.[51] Hurricanes Maria, Irma, and Harvey alone affected 25.8 million people and generated 120,000 insurance claims through the National Flood Insurance Program.[52] Natural disasters of all kinds, from hurricanes and floods, to wildfires and earthquakes, disrupt living environments and endanger public health.

In the United States, an estimated 25 million people were affected by a natural disaster in 2017, and nearly 5 million households registered for FEMA's Individual Assistance program.[53] The emergency housing that is required following a natural disaster can range from a single night in a shelter or hotel, to months of semi-permanent long-term housing. Finding suitable housing for affected communities while repairing the damage is a fundamental component to disaster response and recovery. Incorporating resiliency strategies, either during the reconstruction or before a disaster hits, is crucial to mitigating the damage of future disasters. Without robust disaster housing programs, natural disasters have been found to directly contribute to an increase in homelessness, especially among low-income populations. For example, an estimated 60,000 people experienced homelessness as a result of Hurricane Hugo in 1989.[54]

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"Finding suitable housing for affected communities while repairing the damage is a fundamental component to disaster response and recovery."

The destruction from a natural disaster can also jeopardize public health in a litany of ways. In addition to the immediate danger induced by a natural disaster, the ensuing aftermath can introduce new health crises. When key pieces of infrastructure are damaged, such as transportation, water, or electricity, vital health care services can be interrupted. Depending on the nature and location of the disaster, dangerous environmental hazards can emerge, such as the effects of smoke inhalation in a wildfire or the water contamination that can occur as waters flood.[55] According to a *New York Times* analysis, more than 2,500 sites that handle toxic chemicals in the United States are at risk of flooding.[56] Long after the disaster ends, the fallout and trauma of the disaster can also result in a mental health crisis. Following a major natural disaster, reports of mental health problems have been shown to increase 5 to 15 percent.[57] Within the four months following Hurricanes Maria and Irma, Puerto Rico recorded a 55 percent increase in suicides, compared to the same period in 2016.[58]

The governmental activities surrounding a natural disaster are often categorized in four stages: mitigation, preparedness, response, and recovery (though a variety of activities overlap these stages). Though FEMA is the chief federal agency for natural disasters, under the Emergency Support Functions (ESF) structure, several activities are delegated to HUD and HHS—specifically: ESF #6, defined as Mass Care, Emergency Assistance, Temporary Housing and Human Services; and ESF #8, for Public Health and Medical Services. FEMA is the primary agency for ESF #6, with HHS and HUD as support agencies, while HHS is the primary agency for ESF #8 with the Department of Homeland Security (DHS) as a support agency.[59]

Notably, while FEMA's Transitional Shelter Assistance (TSA) program has been deployed in response to the 2017 natural disasters, FEMA and Congress have not authorized or funded HUD's Disaster Housing Assistance Program (DHAP), as was deployed following Hurricanes Katrina, Rita, Ike, and Gustav.[60] Though FEMA's TSA program operates as the immediate housing response mechanism, since Hurricane Katrina in 2005, Congress has directed HUD to administer a variety of alternative housing programs that are designed to more effectively ensure the long-term housing and well-being of disaster-affected populations. HUD's DHAP is a pilot rental assistance program, designed to provide affordable and safe housing for individuals with access and functional needs, including disadvantaged seniors, people with disabilities, and people experiencing homelessness.

HUD, HHS, and USICH also provide an extensive body of disaster preparedness toolkits and guides, including HUD's Disaster Recovery Homelessness Toolkit;[61] the interagency Disaster Preparedness to Promote Community Resilience;[62] HHS' Response and Recovery Resources Compendium;[63] and the HHS Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE).[64]

As natural disasters appear to be worsening in both severity and number, HUD and HHS should reexamine past collaborations, in addition to ongoing and future opportunities to better prepare for, respond to, and recover from national disasters in a manner that improves the nation's health and housing outcomes.

Potential HUD-HHS partnerships around a natural disaster should include: disseminating best practices for housing and health preparedness; finding suitable and stable housing (transitional or permanent) for people affected with either preexisting or disaster-induced medical needs; connecting supportive services to HUD relocation properties; and ensuring that long-term recovery funds are utilizing the latest resiliency standards, and incorporating a connection to health services.

Data Sharing

Data sharing agreements are a fundamental component of a comprehensive disaster response. For example, as Hurricane Irma struck Florida in 2017, Miami's Fire Department and Emergency Medical Services utilized lists of affordable and critical housing structures from the city's Resiliency Office, in addition to a list of assisted living facilities from the Department of Planning and Zoning, along with power outage data from Florida Power & Light.[65] This comprehensive data sharing agreement created a blueprint for emergency responders to reach vulnerable populations.

Similar data-based efforts are being deployed at the federal level. In 2015, HHS launched the emPOWER map, an initiative that publicly displays de-identified, aggregate Medicare claims data down to the ZIP code level, overlaid with updated severe weather tracking from the National Oceanic and Atmospheric Administration to identify locations where individuals that are at-risk in a power outage scenario. With over 2.5 million Medicare beneficiaries relying on electricity-dependent medical equipment, this data provides potentially lifesaving information to first responders and emergency planners both before and during a natural disaster.[66]

Recommendations:

HUD and HHS should jointly review the current capacity of state and local agencies to conduct successful data sharing operations in the event of a natural disaster. Preemptively establishing the necessary data standardization and MOUs will enable agencies to immediately share data during an emergency, increasing preparedness and familiarity of each agency prior to a disaster, and shortening response times during a disaster.

In collaboration with HUD property data, HHS should continue to improve and expand the data collected for the emPOWER Map. Additionally, HUD and HHS should conduct a joint review of the available datasets that could be utilized to further inform federal, state, or local disaster preparedness, response, and recovery.

Program Coordination

HUD and HHS operate a variety of programs directed at disaster preparedness, response, and recovery. Under HUD's Community Development Block Grant Disaster Recovery program (CDBG-DR), state and local governments receive appropriated funds, which are in turn disseminated in the form of grants to state agencies, non-profits, economic development agencies, citizens, and businesses.[67] In addition to providing resources to state and local agencies, HUD and HHS provide guidance and technical assistance across numerous disaster-related topics. While these programs have proven vital to the response and recovery of a community following a natural disaster, there is a distinct lack of coordination between the administrating offices and departments.

Progress has been made in recent years to integrate multiple disaster relief programs, federally and across other jurisdictions. The number of regional planning alliances has increased, and programs such as HHS' Hospital Preparedness program are funding emergency disaster response planning for coalitions of hospitals, long-term care facilities, community health centers, and public health agencies to identify services gaps in a variety of disaster scenarios.[68] However, in addition to integration between departments, these programs do not universally incorporate a prioritization for housing and health needs among low-income and vulnerable populations.

Recommendations:

Building on the past successes of DHAP and similar alternative housing pilot programs, HUD and HHS should support legislation to permanently authorize DHAP as a primary housing program for disaster response and recovery.

HUD and HHS should align their disaster funds and programs along a targeted goal of improving health and housing conditions among vulnerable and low-income populations. Given the decentralized nature of the HUD and HHS disaster programs, an alignment of the existing resources will hinge on implementation at the state and local levels. Through the review and approval of the state, local, tribal, and territorial action plans required for various federal programs, HUD and HHS should advise state and local agencies to develop collaborative health and housing programs with the capacity to respond to a potential disaster. For example, HUD should partner with HHS to improve the dissemination of CDBG-DR funds in order to emphasize resilient and health-integrated projects.

Additionally, given the unique circumstances of the disaster response and recovery in Puerto Rico and the U.S. Virgin Islands, HUD and HHS should ensure that all available programs operating with the Joint Field Offices are coordinating to provide the optimal health and housing services. With an acute safe and affordable housing shortage, combined with an increased risk of physical health problems, mental health problems, and environmental exposures, HUD and HHS should ensure that vulnerable and affected populations have access to all available resources, across all local, state, and federal programs.

4. HEALTHY AGING

Each day, approximately 10,000 baby boomers—the generation of 78 million Americans born between 1946 and 1964—turn age 65 and become Medicare-eligible.[69] By 2030, the number of older adults in the United States is projected to exceed 73 million, nearly doubling the senior population in a mere 20 years.[70] Nearly all seniors in the United States have a chronic condition, the care of which is a significant driver of future health care spending. In addition, seniors have disproportionately higher functional limitations in performing activities of daily living. Thus, about 70 percent of adults over 65 will need long-term services and supports (LTSS) at some point in their lifetime.[71] With a rising number of older adults, spending on LTSS is expected to increase from 1.3 percent of GDP in 2010 to 3 percent of GDP in 2050.[72]

While, according to a 2014 AARP survey, 88 percent of senior households strongly or somewhat agree that they would like to stay in their current residences as long as possible and 89 percent strongly or somewhat agree they would like to remain in their communities as long as possible, this will be increasingly difficult.[73] In addition to household finances being a big hurdle, many homes lack the structural features and support services to make living independently a safe and viable option. In fact, one study estimated that just 3.8 percent of housing units in the United States are suitable for

individuals with moderate mobility difficulty.[74] While these challenges exist, there are also enormous opportunities for healthy aging at home because where one lives can serve as a vital platform of the delivery of health care and other critical services.

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> *"While, according to a 2014 AARP survey, 88 percent of senior households strongly or somewhat agree that they would like to stay in their current residences as long as possible and 89 percent strongly or somewhat agree they would like to remain in their communities as long as possible, this will be increasingly difficult."*

Both HHS and HUD recognize this reality through their respective programs, activities, and initiatives. The HHS FY2018 budget stipulates that departmental programs focus on the most vulnerable Americans, such as the elderly. HUD's emphasis on the elderly population is best exemplified by its current implementation of a supportive services demonstration for elderly households in HUD-Assisted Multifamily Housing. Below are opportunities for the two departments to increase their collaborations to better support healthy aging.

Home Modifications

"Universal design" elements can help make homes safer for seniors. No-step entries; single floor living, eliminating the need to use stairs; switches and outlets accessible at any height; extra-wide hallways and doors to accommodate walkers and wheelchairs; and lever-style door and faucet handles are all important universal design features. However, according to Harvard's Joint Center for Housing Studies only 57 percent of existing homes have more than one of these features.[75] At the federal level, there are numerous programs that can help older adults age in place by supporting home retrofits, home repairs, and other modifications, but there is little coordination among departments to maximize the effectiveness and reach of these programs. Some in Congress have recognized this failure and have sought to improve access to federal resources for home modifications. For example, Sens. Angus King (I-ME), Susan Collins (R-ME), and Brian Schatz (D-HI) introduced S. 913, the Senior Home Modification Assistance Initiative Act, to coordinate federal home modification programs. Yet much more can also be done administratively.

Recommendations:

Both HHS and HUD have programs that can provide support and resources for home assessments and modifications, including in some cases, apartments that serve low-income people. At HHS, programs include Title III of the Older Americans Act and Medicaid 1915(c) home and community-based waivers. At HUD, programs include the Community Development Block Grant program, HOME Investment Partnership Program, and the Housing Trust Fund. Additional federal programs supporting home modifications exist at the USDA, DOE, and VA. Greater coordination across the departments, but at the very least between HHS and HUD, could result in development of an analysis of households served and approximate dollars invested for senior households by program. The analysis would help identify and address gaps, or duplications, in populations supported. Further, the effort could inform private-sector entities offering modification services. Finally, the Aging Network, supported by HHS, could disseminate information on public and private resources available for home assessments and modifications to the 10 million low-income seniors currently served by senior centers.

Health Care and Supportive Services

HUD is currently contributing to the evidence base for the proposition that supportive services are essential to senior health through a $15 million Integrated Wellness in Supportive Housing Demonstration for low-income seniors in its assisted properties. This effort involves on-site care coordinators and part-time nurses who provide service coordination coupled with wellness services. While this effort deserves praise, there should be a larger initiative funded through the health care system to demonstrate that this approach helps to prevent or delay health and functional declines in seniors and results in savings for taxpayer-funded health insurance programs.

Recommendations:

CMS, through its Center for Medicare and Medicaid Innovation, should solicit proposals for a demonstration project with health care entities willing to be accountable for quality health outcomes and total costs of care for Medicare beneficiaries living in publicly assisted housing. Partnering with housing properties or organizations, eligible applications would ensure the delivery and coordination of health care, long-term services and supports, and preventive services within a congregate housing setting, using evidence-based models or programs that have a track record of helping beneficiaries remain in their homes and reduce health care utilization. The payment model could include advanced payments which applicants could use to make investments in their care-coordination infrastructure as well as include shared savings among participating entities and partners if the demonstration saves health care dollars from reduced hospitalizations, hospital readmissions, and nursing home stays for beneficiaries.

State Leadership and Flexibility

Medicaid currently pays for housing in the form of nursing homes, but it does not otherwise allow capital funding for supportive housing and it does not pay for room and board. There are several opportunities through which states could be reimbursed for providing housing-related activities and services, such as assisting with the housing application process; identifying resources to cover expenses like moving costs; ensuring that a living environment is safe; education and training on the role, rights, and responsibilities of the tenant; and assistance with the housing recertification process. In addition, through home-and community-based waivers, states can cover environmental modifications to install necessary accommodations for accessibility.

Recommendations:

CMS, in partnership with state Medicaid agencies, should track to what extent older beneficiaries—specifically beneficiaries who are dually eligible for Medicare and Medicaid at risk for institutionalization—are utilizing these services. The tracking of this information should also seek to quantify, to the extent that it is feasible, the impact of select services on beneficiary outcomes and health costs.

In addition, Medicaid's Innovation Accelerator program should continue efforts to bring together state Medicaid and housing agencies to identify affordable housing options for beneficiaries ready to be transitioned from institutionalized settings. For example, Iowa has created a state-funded rental-subsidy program administered by the Iowa Finance Authority that specifically targets older adult Medicaid home- and community-based services recipients. Similar initiatives may further increase the supply of affordable housing, a recognized barrier for people who want to leave institutionalized settings.

Conclusion

The policy case for better connecting health and housing programs and resources is increasingly apparent. HUD and HHS—given their expertise, history, and challenges—are uniquely positioned to demonstrate such benefits. By partnering together, incorporating a data-driven and evidence-based approach, the departments can materially improve the health and quality of life of the populations their programs serve. They can also make more efficient use of limited resources, which is a key consideration given the federal government's increasingly precarious fiscal situation. In sum, the opportunities identified in this white paper represent key areas for collaboration in the coming years that would help the two departments jointly tackle their most pressing priorities with the most efficient use of the taxpayer's dollar.

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