U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy

Housing Options for Recovery for Individuals with Opioid Use Disorder:

A Literature Review

June 2019

Office of the Assistant Secretary for Planning and Evaluation

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This report was prepared under contract #HHSP233201600010I between HHS's ASPE/DALTCP and Abt Associates. For additional information about this subject, you can visit the DALTCP home page at https://aspe.hhs.gov/office-disability-aging-and-long-term-care-policy-daltcp or contact the ASPE Project Officer, Emily Rosenoff, at HHS/ASPE/DALTCP, Room 424E, H.H. Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C. 20201; Emily.Rosenoff@hhs.gov.

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Prepared for:
Emily Rosenoff
U.S. Department of Health and Human Services
Office of the Assistant Secretary for Planning and Evaluation (ASPE)
200 Independence Ave., S.W.
Washington, D.C. 20024

Submitted by:
Brandy E. Wyant
Samantha S. Karon
Susan G. Pfefferle

Abt Associates
55 Wheeler St.
Cambridge, Ma.
02138

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LIST OF EXHIBITS

ACRONYMS

The following acronyms are mentioned in this report and/or appendices.

ADA	Americans with Disabilities Act
AHCM	Addiction Housing Case Management
ASPE	HHS Office of the Assistant Secretary for Planning and Evaluation
BHCHP	Boston Health Care for the Homeless Program
CSH	Corporation for Supportive Housing
DESC	Downtown Emergency Service Center
EBP	Evidence-Based Practice
HHS	U.S. Department of Health and Human Services
HUD	U.S. Department of Housing and Urban Development
KFT	Keeping Families Together
MAT	Medication-Assisted Treatment
NARR	National Alliance for Recovery Residences
OBOT	Office-Based Opioid Treatment
OBOT-B	OBOT with Buprenorphine
OTP	Opioid Treatment Program
OUD	Opioid Use Disorder
PSH	Permanent Supportive Housing
SAMHSA	HHS Substance Abuse and Mental Health Services Administration
STEP	Stepped Treatment Engagement Program
SUD	Substance Use Disorder
VA	U.S. Department of Veterans Affairs

EXECUTIVE SUMMARY

The association between substance use disorder (SUD), and specifically opioid use disorder (OUD), and homelessness has been studied and established (National Alliance to End Homelessness, 2016; Saxon & Malte, 2017; U.S. Conference of Mayors, 2008). This is particularly seen with veterans, whose rates of both homelessness and OUD are greater than those observed in the general population (National Alliance to End Homelessness, 2015b; Bachhuber, Roberts, Metraux, & Montgomery, 2015). This project seeks to explore the options for care for individuals experiencing both homelessness and OUD, as well as to examine the existing evidence of the efficacy of such models.

Programs to address homelessness for individuals with OUD may use several different models (e.g., Housing First, recovery housing). The success of program models in the population of individuals with OUD may be measured by the average length of time that clients remain housed, or their rates of substance use, among other factors.

The Housing First model, which emphasizes immediate access to housing without preconditions such as sobriety or participation in supportive services, in particular has been studied to learn how well it helps individuals with OUD to remain housed and reduce their opioid use. Housing First is recognized by the U.S. Department of Health and Human Services Substance Abuse and Mental Health Services Administration and the U.S. Department of Housing and Urban Development as a best practice for reducing chronic homelessness. In contrast, the recovery housing model emphasizes abstinence and safe housing for individuals experiencing homelessness and SUD. Research studies examining both of these models vary in how well they are designed. Therefore, further investigation is needed to determine whether one housing model is better on average for individuals with OUD. This project does not attempt to compare the efficacy of one model over another, but rather to review the evidence for the various models that are available to serve individuals experiencing homelessness with OUD.

Based on this literature review, we identified substantial gaps in the published and unpublished literature on housing models to support recovery from OUD in individuals who experience homelessness or housing instability. These include the importance of: educating decision-makers about the needs of individuals experiencing homelessness with OUD, incorporating mental health treatment, addressing the use of other drugs in addition to opioids, fostering social support for clients. Rigorously designed studies of housing models other than Housing First are needed. The Housing Choice model, developed by Central City Concern in Portland, Oregon, is a combined approach that incorporates elements of both recovery housing and Housing First to allow individuals to select housing based on their personal needs. Housing Choice shows early promise, and is currently being evaluated through a randomized controlled trial.

In the face of the opioid crisis in the United States, research is critically needed to answer remaining questions, such as: whether interventions are possible to interrupt the pathway of OUD to homelessness; which housing program model leads to the most successful outcomes for those with OUD; and what is the success of transitional housing for individuals with OUD.

1. INTRODUCTION

This environmental scan is part of a larger project whose purpose is to help the U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary for Planning and Evaluation (ASPE) and the U.S. Department of Housing and Urban Development (HUD) describe the housing programs available for individuals with opioid use disorder (OUD) who experience housing instability or homelessness. The specific purpose of this environmental scan is to review the published and unpublished literature, including white papers and issue briefs, to identify what is known about housing models that can best serve people with OUD who also experience homelessness or housing instability.

Housing providers and substance use disorder (SUD) providers may make different assumptions about the needs of people who have OUD along with experience of housing instability or homelessness. This might include assumptions about what is the most pressing need for individuals, or what settings are appropriate to receive services. Each type of provider may use different language to describe their services. Exhibit 1 is a glossary to help readers understand a variety of terms used in the literature on housing instability, homelessness and OUD.

EXHIBIT 1. Glossary of Terms

Term	Definition
Behavioral health services	Services for people with a mental and/or SUD diagnosis. Includes clinical and supportive services.
Opioid use disorder (OUD)	A problematic pattern of opioid use leading to clinically significant impairment or distress.
Medication-assisted treatment (MAT)	Combination of medication and behavioral therapies used to treat OUD. Three HHS Food and Drug Administration-approved medications are used in MAT: methadone, buprenorphine, and naltrexone for treatment of an OUD.
Medication-assisted recovery[1]	An approach to treating individuals with SUD using counseling, social and peer supports and services, and medication therapy to help individuals achieve and maintain recovery over the long term.
Opioid treatment program (OTP)[2]	A specialized program where MAT is provided.
Buprenorphine waiver[3]	Physicians, physician assistants, and nurse practitioners may complete additional training to obtain a waiver to prescribe buprenorphine in office-based settings. Also known as Data2000 practices. Providers are limited to 30 patients in the first year and may apply to increase treatment to 100 patients. Physicians who have prescribed buprenorphine to 100 patients for at least 1 year may apply to increase treatment to 275 patients.
Housing instability[4]	A situation where an individual family has a place to stay but housing is not stable. Examples include being doubled up living with family or friends, being at risk of eviction, and not having enough money for food, basic needs, and housing.

EXHIBIT 1. (*continued*)	
Term	**Definition**
Chronic homelessness[5]	A situation in which a person has lived in a place not meant for human habitation, a safe haven, or an emergency shelter, either continuously for at least 12 months or on at least 4 separate occasions totaling at least 12 months within the last 3 years. A person must have a disability to meet the federal definition of chronic homelessness. A high proportion of individuals experiencing chronic homelessness have severe mental illness and/or an SUD.
Housing First	A low-barrier approach to connecting individuals and families who have experienced homelessness to permanent housing without preconditions and barriers to entry--such as sobriety, treatment, or service participation requirements.
Rapid re-housing	Time-limited rental assistance for individuals or families who have lost housing or are experiencing housing instability. The aim is to move people rapidly into housing to reduce the harmful effects of homelessness on families and individuals.
Permanent supportive housing (PSH)	Subsidized housing combined with case management and linkages to intensive services to support individuals with behavioral health and other conditions or disabilities. Neither housing assistance nor services are time-limited.
Transitional housing	Time-limited housing to help adults, youths, and/or families who experience homelessness to gain work and permanent housing. Frequently used with individuals newly in recovery, transitioning from other settings. Case management, behavioral health treatment, and supportive services are provided.
Residential re-entry center/halfway house	Time-limited congregate housing that offers treatment on-site to help individuals with severe behavioral disabilities and/or criminal records to reintegrate back into the community. Participation in treatment is tied to housing.
Recovery housing	Short-term or longer-term substance-free housing with recovery supports. Some recovery housing providers serve people who are receiving MAT, while others do not.
Continuum of Care (CoC)[6]	A term used by HUD to describe community-wide coordinated approaches aimed at preventing and ending homelessness. A goal of the CoC is to implement central access to help individuals/families at risk of homelessness or those who are homeless to find housing and supports.
Case management	Case management includes needs assessments, service planning, monitoring, as well as coordination and linkages to services and supports with the aim of improving an individual's wellbeing. Case management services can be time-limited or ongoing. They can be focused solely on housing and employment, health, behavioral health, or all aspects of a person's life.
Harm reduction	Approaches and policies meant to mitigate the negative effects of human behavior. Such approaches also aim to help individuals avoid behaviors that put them at risk, and reduce the negative effects of some dangerous behaviors.
Fair Housing Act (Title VIII of the Civil Rights Act)	The Fair Housing Act forbids discrimination in the sale or rental of housing based on a person's race, color, religion, sex, familial status (e.g., children or marital status), national origin, or handicap/disability.
Service integration	Well-coordinated behavioral health, housing, social, and/or health services, sometimes co-located in 1 site and provided by 1 team. The aim is to make sure that all providers work together to coordinate their services to treat/support the whole person.

EXHIBIT 1. (*continued*)	
Term	**Definition**
Holistic model of care	A model that takes the whole person into account: physical, emotional, spiritual, social, intellectual, and financial wellbeing. Holistic models are premised on the fact that stable housing is essential to good health and wellbeing.
Wraparound	Services that are "wrapped" around the individuals to make sure that their needs for stable housing and recovery are met. May include employment services, budgeting, childcare or family interventions, transportation, peer supports, and other services.
Patient-centered[7]	Process by which the individual is provided with information they need in a format they can understand, so that they individual can make decisions about their own services/treatment, in partnership with providers. Services are voluntary and flexibly provided to meet needs of the individual or family, in a way that is acceptable, and when services are needed.
Health Homes[8]	A Medicaid program option where Federally Qualified Health Centers, Community Mental Health Centers, or primary care practices and partners offer coordinated, integrated services and supports for people with 2 or more chronic conditions, including people with OUD. States must include Health Home services in their state Medicaid plans for services to be reimbursed by Medicaid for eligible individuals.
Patient-centered medical home[9]	Aims to provide comprehensive care that is patient-centered, coordinated, accessible, and of high quality. Treatment teams can consist of doctors, nurses, nurse practitioners, case managers, behavioral health clinicians, health educators, pharmacists, and nutritionists.
Patient navigation	Behavioral health care, health care, and other service systems can be difficult to navigate. Systems and providers can use terms differently and have different rules. Patient navigators help individuals get through the system to needed services and to understand treatment/service options. Navigators can act as advocates, can provide transportation, and participate in appointments. Navigators can work in housing programs, health clinics, and other settings. They may be peers or other staff.
Patient, client, resident, individual, program participant	Different systems use different terms when referring to individuals they serve. For example, opioid treatment providers refer to the individuals they treat as "patients" because they are providing a medical intervention. Individuals served through mental health systems are often referred to as "clients" or individuals who are "receiving treatment." Housing providers refer to individuals they serve as "residents," while other service providers may use the term "program participant." Each of these terms is used in this environmental scan, depending on the literature cited.

NOTES:

1. National Council on Alcoholism and Drug Dependence, 2015.
2. SAMHSA, 2015.
3. SAMHSA, 2017a.
4. Partnering for Change, n.d.
5. HUD, 2016.
6. HUD, n.d.
7. Epstein & Street, 2011.
8. HHS Centers for Medicare & Medicaid Services, n.d.
9. HHS Agency for Healthcare Research and Quality, n.d.

2. METHODS

This section describes the research questions and methodology used in searching the literature.

2.1. Research Questions

The current project seeks to answer the following questions:

1. What does the literature tell us about risk factors for housing instability for individuals with OUD? Do these differ by population?

2. Are there any prevention strategies to reduce the risk of homelessness among individuals with OUD?

3. What housing models can serve individuals experiencing housing instability receiving medication-assisted treatment (MAT)?

4. What are the elements of each housing model?
    a. Relative cost of housing assistance and source of funding for the housing assistance.
    b. Supportive services included in the model.
    c. Expected length of participation/tenure.
    d. Potential to coordinate with MAT providers (including different types of MAT providers) or support MAT generally.
    e. Ability to coordinate with behavioral health and other health care providers.
    f. Integration with other elements of community living, such as employment supports.

5. Are some housing models better suited for some subpopulations with OUD?

6. What are different considerations for programs in rural areas?

7. What are promising practices for supporting housing tenancy for individuals receiving MAT?

8. As MAT providers are increasingly expected or encouraged to address psychosocial services, how can they coordinate with housing providers?

9. What are the barriers to for individuals on MAT to access housing, shelters, transitional housing?
    a. Impact of fair housing issues.
    b. Impact of community resistance (Not In My Backyard).
    c. Stigma of MAT.
    d. Compliance with the Americans with Disabilities Act (ADA).

10. Are there any potential conflicts with the Medicaid Institutions for Mental Diseases (IMD) exclusion?

While the environmental scan, and the larger project within which it is embedded, seeks to answer all of the stated research questions, we anticipated that the literature and other available materials would not contain answers to all the questions. Discussions with experts and providers in a number of communities will be used to fill the gaps in the available published and unpublished literature.

2.2. Literature Review

2.2.1. Sources from the Peer-Reviewed Literature

EBSCO and Google Scholar were used to identify published literature. The EBSCO service includes the following databases: Academic Search Complete, Business Source Corporate, EconLit, Environment Complete, GreenFILE, and MEDLINE Complete. Specific search terms and strings used in each database are included in Appendix B. Only studies conducted in the United States were reviewed, with one exception for a particularly relevant study conducted in Canada that was included because of its applicability to the research questions.

When a search returned fewer than 500 results, a member of the study team scanned each title to determine whether the article was related to the research questions in Section 2.1. If the study team member decided that an article could be relevant, the full abstract was reviewed to determine whether to include the article. When a search returned more than 500 results, the first several dozen results were scanned to see how relevant they were. Then, the team member refined the search by adding an additional search term or changing an existing one.

Through this process, the study team identified 42 articles from over 56,000 returned results that addressed the research questions listed in Section 2.1. The majority of these 42 articles are discussed in the findings. Articles are not described in the findings if they are included as part of a meta-analysis discussed in the findings section, or if other included studies reached the same conclusion but through a more-rigorous study design.

2.2.2. Scan of Gray Literature, Briefs, and White Papers

Websites of government agencies and nongovernmental organizations were searched to scan for relevant unpublished literature, white papers, and research briefs. The specific search terms used for government agencies and nongovernment agencies are shown in Appendix C and Appendix D respectively.

Reports, publications, press releases, blog posts, and conference proceedings were found on the official websites of the following agencies and organizations: HHS Administration for Children and Families, specifically the Family and Youth Services Bureau National Clearinghouse on Families and Youth; ASPE; U.S. Department of Justice; HUD; HHS Substance Abuse and Mental Health Services Administration (SAMHSA); U.S. Interagency Council on

Homelessness; VA; Central City Concern; Corporation for Supportive Housing (CSH); Downtown Emergency Service Center (DESC); National Alliance for Recovery Residences (NARR); National Alliance to End Homelessness; National Health Care for the Homeless Council.

A similar process was used to determine the relevance of both published and unpublished, or gray, literature. Search terms were entered into the website's search function. A study team member reviewed the results for relevance and changed the terms if more than 100 results were returned. The abstract or executive summary of a report or white paper, if one existed, was reviewed for titles determined to be relevant. A total of 42 relevant documents were found through government agency websites from over 6,000 search results, and a total of 37 relevant documents were found through nongovernment websites from 170 search results. Information from these websites is included in Section 3 in cases where the information answered all or part of a research question.

2.2.3. Outreach to Academic Institutions and Government Agencies

Organizations with known expertise in OUD and/or housing were contacted, including SAMHSA, the National Association of County Behavioral Health and Developmental Disability Directors, the American Association for the Treatment of Opioid Dependence, Brandeis University, the Alcohol Research Group, the National Development and Research Institutes, and Washington University in St. Louis. Contacts were asked to recommend briefs, reports, or unpublished papers to include in the environmental scan.

3. FINDINGS

Notable findings are described here.

3.1. Prevalence of Housing Instability among Individuals with Opioid Use Disorder

SUD increases a person's risk of homelessness (National Alliance to End Homelessness, 2016; Saxon & Malte, 2017), and research shows SUD to be a leading cause of homelessness in the United States (U.S. Conference of Mayors, 2008). Individuals with SUD are more likely to be homeless for a longer time (Linton, Celentano, Kirk, & Mehta, 2013; National Health Care for the Homeless Council, 2016; Spinner & Leaf, 1992) and to have become homeless at an earlier age (Cambioli et al., 2016) compared to individuals without SUD.

3.1.1. OUD Prevalence among Individuals Experiencing Homelessness

Adults with a history of homelessness and SUD are very likely to report that they have misused opioids. About 72% of 296 adults who were currently experiencing homelessness when surveyed in San Francisco reported opioid misuse. About 37% of individuals surveyed reported opioid misuse within the past 90 days (Hansen et al., 2011; Vijayaraghavan, Penko, Bangsberg, Miaskowski, & Kushel, 2013). Rates of prescription drug misuse are high among youth who experience homelessness, and a multi-city survey found that nearly one-quarter of youth reported misusing prescription drugs in their lifetime (Administration for Children and Families, 2016). In a Los Angeles study, 50% of 451 youth who were experiencing homelessness reported a lifetime history of prescription drug misuse, with 24.5% of youths reporting prescription opioid misuse only and 14.9% reporting misuse of some combination of prescription opioids and other drugs (Rhoades, Winetrobe, & Rice, 2014).

3.1.2. Risk of Overdose

Opioid overdose is more common in individuals who experience homelessness than in individuals who inject drugs but are not homeless (Sherman, Cheng, & Kral, 2007). Individuals who experience homelessness are also more likely to continue using drugs after overdose than in individuals who inject drugs but are not homeless (Linton et al., 2013). Injection drug use is more common in ZIP codes with a higher rate of homelessness (Linton et al., 2017).

3.1.3. Veterans' Risk of OUD and Homelessness

Rates of opioid misuse are particularly high among veterans who experience homelessness. Veterans are more likely to experience homelessness than civilians (National Alliance to End Homelessness, 2015b), while veterans seeking treatment for OUD are ten times more likely to be homeless than veterans without OUD who seek services through the VA (Bachhuber, Roberts, Metraux, & Montgomery, 2015). Drug overdose is a major cause of death among adults who experience homelessness (Bauer, Brody, Leon, & Baggett, 2016). Adults who experience

homelessness are nine times more likely to die from an opioid overdose than adults with stable housing (Baggett et al., 2013). Many individuals with SUD who experience homelessness have co-occurring illnesses (National Health Care for the Homeless Council, 2017; Saxon & Malte, 2017). The combined effect of physical illness, mental illness, and lack of housing results in higher mortality rates for individuals experiencing homelessness (National Health Care for the Homeless Council, 2016).

3.2. Evidence of Impact of Housing Model on Opioid Use Disorder Treatment Outcomes

Many program models exist to address homelessness. The models investigated in this environmental scan are listed in Appendix A. Two additional interventions, addiction housing case management (AHCM) and landlord engagement, were identified during the literature search and are also included in this section. Regardless of housing model, fostering social support may benefit individuals experiencing homelessness with SUD. In a study of veterans who were experiencing homelessness in Los Angeles, many with SUD, social support was identified as critical in maintaining housing. This finding was consistent across three groups -- stable independent housing, sheltered housing, and unstable housing (Gabrielian, Young, Greenberg, & Bromley, 2016).

3.2.1. Housing First

In the Housing First or "low-barrier" model, clients are not required to be sober to enter or remain in a housing program. The model has gained support in recent years, because models that do require sobriety often have difficulty retaining clients and helping them to avoid substance use (Padgett, Stanhope, Henwood, & Stefancic, 2011). Relapse is common among those with SUD, and the Housing First approach recognizes this reality (Appel, Tsemberis, Joseph, Stefancic, & Lambert-Wacey, 2012). Several research studies conducted in different cities have consistently found a housing retention rate of 85% after five years in Housing First programs (Tsembris & Henwood, 2013). Further, individuals with a history of illicit drug use are more likely to be unemployed and to have an incarceration record, which can make them ineligible for subsidized housing (Linton et al., 2013). Client satisfaction is similar in both Housing First programs and programs that require either mental or SUD treatment (Robbins, Callahan, & Monahan, 2009).

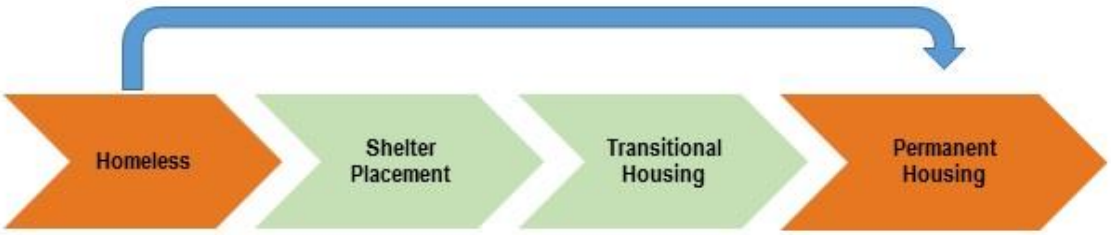
Prior to the development of Housing First, most homeless system programs had participation requirements, such as sobriety. Further, individuals had to advance through the steps of emergency shelter and transitional housing before they were considered ready for permanent housing, as shown in Exhibit 2.

EXHIBIT 2. Traditional Service Approach

SOURCE: Adapted from Tsembris & Henwood, 2013.

In contrast, Housing First allows clients to be placed directly into permanent housing without needing to prove their fitness through a series of prerequisites, as shown in Exhibit 3.

EXHIBIT 3. Housing First Approach



SOURCE: Adapted from Tsembris & Henwood, 2013.

In New York City, many programs to address homelessness have adopted the Housing First model, notably Pathways to Housing, Inc. These programs have shown several positive outcomes for Housing First, including higher retention rates in housing one year after program entry (National Center on Addiction & Substance Abuse at Columbia University & CSH, 2012). For example, clients in programs that more strictly adhere to the Housing First guidelines are more likely to remain in the program one year later compared to clients in programs that lack some of the components of Housing First (Davidson et al., 2014). One study found that veterans who participated in Housing First were less likely to remain in housing one year later compared to participants in other program models, but this study was small, with low enrollment, so further research is needed (Westermeyer & Lee, 2013).

Housing First clients are more likely than clients in other programs to continue using MAT as prescribed for at least three years (Appel et al., 2012). Housing First clients are also less likely to misuse substances compared to clients who are involved in programs that require SUD treatment as a condition of receiving housing (Padgett et al., 2011).

The Housing First model is recognized by SAMHSA and HUD as a best practice for reducing chronic homelessness. Housing First has also been shown to reduce the use of emergency shelters, detoxification centers, jails, hospitalizations, and emergency room visits among individuals with SUD (CSH, 2017). The model can be used to support community integration by placing individuals transitioning out of homelessness into scattered-site apartments within the community. For example, Pathways to Housing does not rent more than 20% of the units in any one building (Tsembris & Henwood, 2013). These findings indicate that Housing First offers low-barriers to stable housing for individuals with SUD.

3.2.2. Transitional Housing

We did not find evidence related to transitional housing and individuals with OUD. HUD's Office of Special Needs Assistance Programs funds over 1,600 projects across the country that serve individuals with chronic SUD, including transitional housing programs (HUD, 2015), but no data from any evaluation were found.

3.2.3. Permanent Supportive Housing

While Housing First includes use of permanent supportive housing (PSH), not all PSH uses the Housing First or low-barrier model. Some PSH models require abstinence (Tsai, Kasprow, & Rosenheck, 2014). Several studies have been conducted related to the success of PSH. Veterans with SUD appear to do just as well at maintaining their housing in PSH as veterans who do not have SUD (Tsai et al., 2014). However, veterans with SUD require additional services to address their substance use: PSH alone has not been shown to reduce rates of substance use (Tsai et al., 2014). For the general (nonveteran) population, PSH is associated with a decline in total health costs as well as decreased substance use among high-frequency substance users (Edens, Mares, Tsai, & Rosenheck, 2011).

3.2.4. Recovery Housing

Recovery housing programs are intended to support individuals with SUD in their recovery, often as a step-down from inpatient or residential SUD treatment. The recovery model considers that individuals with a history of SUD are better off in a home environment that emphasizes abstinence. A research review article reported that when other clients in the housing program are actively using, individuals seeking recovery from a SUD may be triggered to relapse (Reif et al., 2014). Program policies on the use of medications such as buprenorphine while in recovery housing vary. Some recovery housing programs do not allow clients to enter housing while participating in MAT for OUD, while others may (NARR, 2012).

Limited research is available to determine whether the recovery housing model helps participants to maintain housing or decrease substance use. Recovery housing has been shown to improve clients' functioning, including better employment and substance use outcomes and reduced criminal activity (Reif et al., 2014); but these studies have had a number of limitations. For example, the programs were defined inconsistently, the studies had small sample sizes, or the evaluations examined outcomes from a single site without a comparison group. Further research is needed in more settings to determine the effectiveness of recovery housing compared to other housing models for individuals with SUD.

3.2.5. Addiction Housing Case Management

AHCM is an approach that was identified during the environmental scan though not included in the original list of models to investigate. AHCM has been implemented with veterans with SUD to provide them with the stability needed to enter housing opportunities through the VA. AHCM involves individualized case management; support in obtaining and maintaining housing; support for SUD, psychiatric, and medical issues; urine testing to screen for substance

use and encourage sobriety; life skills training; and intensive outreach to veterans who disengage from the program (Malte, Cox, & Saxon, 2017).

Veterans receiving AHCM have been found to stay in SUD treatment longer on average compared to veterans in a control group who were offered only a weekly drop-in housing support group. They also reported greater satisfaction with AHCM than veterans who received a less intensive level of support with their housing (Malte et al., 2017). AHCM did not improve substance use, housing, or mental health beyond outcomes found with standard SUD and housing services offered through the VA (Malte et al., 2017).

3.2.6. Housing Choice

Housing Choice, developed by Central City Concern in Portland, Oregon, is a combined approach that incorporates elements of both recovery housing and Housing First to allow individuals to select housing based on their personal needs. Individuals can choose from a range of housing options, including transitional housing, PSH, family housing, Housing First, and recovery housing (Post, 2017). Housing Choice is available in a total of 1,700 apartment units, 1,099 of which are allocated for recovery housing (Post, 2017). Individuals who choose the recovery housing option may enter the program through self-initiated detox or residential detox and then are placed in a recovery community setting and provided with short-term rental assistance (Post, 2017). Integrated health care with specialty addiction and mental health services, as well as supported employment, are offered on-site and nearby (U.S. Interagency Council on Homelessness, 2017b). Housing Choice's recovery housing includes a range of treatment options, including primary care, outpatient treatment, and MAT (Post, 2017). Recovery housing is offered as both a transitional and a permanent option, but individuals actively using are still accepted into the program and offered professional and peer support. On average, short-term recovery housing through Housing Choice costs $9,894 for six months, compared to $27,480 for a four-month placement in residential treatment (Post, 2017).

3.3. Treatment and Other Approaches for Opioid Use Disorder and Homelessness

3.3.1. MAT

MAT has been shown to improve outcomes for OUD compared to counseling alone (Solotaroff, 2016), but patients who receive MAT face considerable stigma (Gregg, 2016; Woods & Joseph, 2015). Numerous courts have found that individuals in recovery from an OUD are protected under the ADA and the Fair Housing Acts, but many patients as well as SUD treatment and housing professionals are unaware of these legal protections (Legal Action Center, 2009; Woods & Joseph, 2015). Individuals receiving MAT to support their recovery are protected by the ADA if the housing residence receives state or local government funding, and by the Rehabilitation Act if the residence receives federal financial assistance (Legal Action Center, 2009). People receiving MAT to support their recovery cannot be excluded from a residence due to their health condition nor can the residence require that they not participate in MAT.

Currently in the United States, three medications are approved for MAT: methadone, buprenorphine, and naltrexone. These medications come in several formulations. Methadone is only available through a certified Opioid Treatment Program (OTP). Buprenorphine may also be prescribed outside an OTP in office-based settings by a physician, physician assistant and nurse practitioner who meets the statutory requirement for a waiver. Unlike methadone and buprenorphine, naltrexone is not a federally controlled substance and may be prescribed by a physician, physician assistant or nurse practitioner.

To obtain certification from the NARR, a recovery residence must provide a place for residents to store their prescriptions securely, as well as the ability to take medications as prescribed (NARR, 2016). Recovery housing programs may refuse to admit individuals participating in MAT when the residence is not adequately staffed to accommodate medication administration. In such cases, NARR recommends that clients be referred to alternative programs (NARR, 2016; Paquette, Greene, Sepahi, Thom, & Winn, 2013).

Shelter-Based Opioid Treatment

The Boston Health Care for the Homeless Program (BHCHP) has developed and now uses a novel intervention to treat OUD at a family shelter (Chatterjee et al., 2017). Physicians provide buprenorphine on-site at the shelter to address transportation and childcare barriers that prevent patients from coming to the physician's office. The program also includes intensive case management and psychotherapy for co-occurring mental health conditions. After three months in the program, participants had fewer positive urine screens for opioids and fewer unexpected urine drug test results. The number of employed participants increased, and the overdose rate decreased (Chatterjee et al., 2017).

Office-Based Opioid Treatment

Office-based opioid treatment (OBOT) has been demonstrated to work among populations of individuals who experience homelessness (Alford et al., 2007), but clinical guidelines that recommend stable housing before providing treatment make it difficult to access for individuals experiencing homelessness. (Center for Substance Abuse Treatment, 2004, 2005).

Homeless and housed patients receiving OBOT with buprenorphine (OBOT-B) have similar rates of treatment failure, illicit opioid use, use of counseling, and participation in mutual help groups (Alford et al., 2007). Patients experiencing homelessness or housing instability require more clinical support than housed patients, but formerly homeless patients are more likely to retain their housing after 12 months in the program as compared to patients who do not receive OBOT (Alford et al., 2007).

Stepped Treatment Engagement Program

The Stepped Treatment Engagement Program (STEP) is a combined buprenorphine and needle exchange program that provides MAT in a nontraditional treatment setting (Tringale, Subica, Danielian, & Kaplan, 2015). STEP was developed and implemented at the Center for

Harm Reduction of Homeless Healthcare Los Angeles after research showed that providing buprenorphine treatment in nontraditional treatment settings improves access to treatment and recovery among underserved populations (Tringale et al., 2015). The primary goal of STEP is to connect treatment-resistant needle exchange patients into long-term treatment by adding MAT services into existing programming for individuals experiencing homelessness (Tringale et al., 2015). In its pilot stage, STEP was implemented as a 22-day program that included medical intake, a 15-day buprenorphine detoxification intervention with peer group support and drug testing, and SUD counseling (Tringale et al., 2015). More research is needed to determine outcomes related to this model.

Community-Based Recovery Centers

Community-based recovery centers are more accessible to poor, urban adults with OUD than traditional primary care settings, and evidence indicates MAT provided in nontraditional settings results in higher rates of abstinence and treatment adherence (Daniels, Salisbury-Afshar, Hoffberg, Agus, & Fingerhood, 2014). Clients served in a buprenorphine treatment program at a community-based recovery center in Baltimore were highly likely to resist opioid use and remain in compliance with their buprenorphine prescription (Daniels et al., 2014). At the end of the program, about half of clients successfully transitioned into buprenorphine treatment in primary care settings (Daniels et al., 2014). MAT programs are useful in nontraditional settings that are located closer to where underserved populations live and where the clients are connected to already existing services such as peer support, SUD, and case management services (Daniels et al., 2014).

3.3.2. Case Management Approaches that may Support Access to MAT

Federal law prohibits housing discrimination against individuals receiving MAT to support their recovery. However, individuals receiving MAT may experience challenges when living in recovery residences that use an abstinence-only approach to SUDs. MAT patients have faced considerable stigma, not only from the general population, housing programs, and landlords, but also from fellow patients in recovery who are not using MAT; this is referred to as "double stigma" (Shinholser, 2016).

Individuals are more likely to participate in MAT when they are stably housed (U.S. Interagency Council on Homelessness, 2017b), because access to MAT can be challenging for individuals who are homeless or unstably housed. Depending on their region of the country, this population may not have connections with physicians able to prescribe MAT (U.S. Interagency Council on Homelessness, 2017b). In Seattle, Washington, the promising practice DESC aims to bring MAT services to clients in locations where they are comfortable, through health care providers located within emergency shelters, in outpatient behavioral health clinics, and at DESC's supportive housing locations (U.S. Interagency Council on Homelessness, 2017b). The promising practice Pathways to Housing PA partners with a local pharmacy to deliver MAT prescriptions to supportive housing sites (U.S. Interagency Council on Homelessness, 2017a).

The National Health Care for the Homeless Council identified the following promising strategies for the successful use of opioids to address chronic pain in adults who experience

homelessness: clear organizational policies and procedures on treating pain; a written, dynamic treatment plan that focuses on functional improvement and holistic care; a signed patient-provider agreement for treatment that identifies the responsibilities of both providers and patients, as well as the potential risks of treatment; a team approach to care delivery and case conferencing that employs a group medical visit model; and a consistent, nonjudgmental approach to evaluating behaviors (National Health Care for the Homeless Council, 2013). Housing providers may consider strengthening partnerships with local medical providers to ensure success of MAT in their clients who receive it (U.S. Interagency Council on Homelessness, 2017a). Leaders of housing and employment programs may consider bringing MAT providers into the discussion when new program elements are being designed, to ensure that the homeless population with OUD have improved access to MAT (Raymond, 2016). Employers, housing providers, and many health care providers need education to understand that the use of MAT medications does not mean that the patient is in active substance use. In fact, MAT is more likely to bring stability to an individual's housing situation (Meges et al., 2014).

3.3.3. Integration of Mental Health Services with SUD Prevention Programs

When mental health services are integrated into supportive housing programs, rates of street homelessness decrease (CSH, 2018). This was seen in Philadelphia's "Blueprint" Project (Maguire, 2017). Successful programs include frequent and intensive street outreach as well as close coordination among multiple levels of care (National Health Care for the Homeless Council, 2016). Among the population served by BHCHP between 2003 and 2008, 81% of overdose deaths involved opioids, but 40% involved multiple drugs (Bauer et al., 2016). Therefore, the most effective programs to address SUD in the population of people who experience homelessness consider multiple drugs, especially alcohol and benzodiazepines, as well as opioids.

4. IDENTIFIED GAPS IN THE LITERATURE

The published and unpublished literature on housing models that can be used to support recovery from OUD in people who experience homelessness or housing instability has numerous gaps. The research questions that cannot be answered through existing literature and other resources are listed below.

Research Question 1: What does the literature tell us about risk factors for housing instability for individuals with OUD? Do these differ by population?

Research Question 2: Are there any prevention strategies to reduce the risk of homelessness among individual with OUD?

Pathway from OUD to Homelessness

Many studies have described the association between OUD and homelessness. (National Alliance to End Homelessness, 2016; Saxon & Malte, 2017; U.S. Conference of Mayors, 2008) However, much less evidence exists to describe the pathway by which OUD may lead to homelessness. If we understand this pathway better, we may develop efforts to prevent homelessness in individuals with OUD.

Research Question 3: What housing models can serve individuals experiencing housing instability receiving MAT?

Comparison of Success of MAT by Housing Model

The literature review did not find evidence for an association between MAT participation and success and type of housing model, despite several sources that advocated for closer collaboration between housing programs and MAT providers. (CSH, 2017).

Transitional Housing for People with OUD

No evidence was found relating to the success of transitional housing in the population of individuals with OUD, despite extensive funding for transitional housing programs.

Rapid Re-housing

No evidence was found related to rapid re-housing and individuals with OUD.

Research Question 4a: The relative cost of housing assistance and source of funding for the housing assistance.

Research Question 4c: Expected length of participation/tenure.

Research Question 4d: Ability to coordinate with behavioral health and other health care providers.

Research Question 4e: Integration with other elements of community living, such as employment supports.

No information was found on model costs. Similarly, length of program participation was not uniformly addressed in the literature, and the literature did not address coordination with providers across services sectors.

Research Question 5: Are some housing models better suited for some subpopulations with OUD?

Models that may Work Best for Youth and Young Adults

Youth and young adults experiencing homelessness and OUD are typically designated "special populations" in the fields of SUD and housing, but this environmental scan did not find evidence of housing models developed to serve these special populations, despite existing literature on the prevalence of opioid misuse among youth who are homeless. In addition, age restrictions included in shelter policies and state-level MAT policies prevent youth and young adults from getting housing services developed for the general adult population.

Research Question 6: What are different considerations for programs in rural areas?

Research Question 7: What are promising practices for supporting housing tenancy for individuals receiving MAT?

Research Question 8: As MAT providers are increasingly expected or encouraged to address psychosocial services, how can they coordinate with housing providers?

Research Question 10: Are there any potential conflicts with the Medicaid Institutions for Mental Diseases (IMD) exclusion?

The literature did not address research questions 6 through 8, and 10.

Given the current opioid epidemic in the United States, and the association between OUD and homelessness, further research is urgently needed to identify the housing models that most efficiently and effectively can assist individuals to access treatment and achieve both recovery and housing stability. While the data on Housing First and the emerging Housing Choice model are promising, further research comparing the effectiveness of one model versus another -- especially for groups with different needs or characteristics -- could assist policymakers and providers to prioritize scarce resources to address the needs of people with OUD who experience homelessness or housing instability.

What was clear in the literature is the stigma associated with both OUD and homelessness, and lack of clarity about existing civil rights protections for individuals beginning their recovery through MAT. Education of providers and policymakers could be useful to assist them to navigate rules related to abstinence and use of medications to assist in recovery from OUD.

APPENDIX A. COLLABORATIVE HOUSING MODELS FOR PEOPLE WITH OPIOID USE DISORDER

Housing Model	Potential Target Populations	Connection to MAT and Other Supportive Service Providers
Options for People At Risk of Homelessness or Unstably Housed		
Homelessness prevention	Homelessness prevention assistance is targeted to people who would become homeless "but for" the assistance, and provides time-limited supportive services and financial assistance to help people attain housing stability. Communities may be people who have previously experienced homelessness or are otherwise at risk of homelessness on discharge from jail or residential treatment. Clients can work with support staff prior to exiting the institution in order to directly enter permanent housing or "bridge housing" (Buck, Brown, & Hickey, 2011).	Services may include SUD treatment, physical or mental health care, assistance to increase income through employment or benefits, and legal assistance. Homelessness prevention providers may also offer supportive services such as transportation, short-term financial assistance, and peer support. Tenants typically move into or maintain permanent rental housing, with supportive services.
Recovery housing	Recovery housing provides substance-free residences that support an individual's recovery. Individuals often enter recovery housing during or immediately after outpatient treatment and may stay for months or years, depending on individual needs.	Peer support and mutual aid groups are often key components of recovery housing. Recovery housing may also provide on-site counseling services and a range of support services for individuals and families.
Residential re-entry centers or halfway houses	Residential re-entry centers or halfway houses provide time-limited support and/or supervision for people exiting incarceration, or residential treatment, and often have requirements for SUD treatment through community-based providers. Residents include people who completed residential drug treatment program while incarcerated.	Halfway houses are a milieu that provides housing and treatment in one location and allows for individuals (typically with severe behavioral disabilities and criminal records) to reintegrate back into the community.
Options for People Who Experience Homelessness		
Emergency shelters	Emergency shelters are intended to provide short-term shelter while people resolve their short-term housing crisis or link to more-intensive supports to meet longer-term housing needs. Emergency shelters often specialize in serving populations such as victims of domestic violence, youth, families with children, or single men or women.	Shelter staff should be trained to identify OUD and facilitate linkages to appropriate resources. OUD service providers should know how to get emergency housing to help stabilize those in their care who need such housing and who need potential linkages to other housing models. Supportive services are sometimes co-located at emergency shelters through partnerships with providers such as Healthcare for the Homeless.

Housing Model	Potential Target Populations	Connection to MAT and Other Supportive Service Providers
Transitional housing	Transitional housing with supportive services is time-limited. The goal is to help people attain permanent housing, obtain income (work or benefits), and improve wellbeing. It is useful when people are newly in recovery and desire additional supports; it is also useful for youth who are parents, and for young adults, as well as for some victims of domestic violence. Similar to transitional housing, transitional living programs provide time-limited housing and supportive services to young people ages 16-22 who experience homelessness.	Depending on the structure, services could be provided on-site, in the person's home, or at a community partner. Transitional housing services can include case management, SUD and mental health treatment, and other supports such as employment and education assistance and parenting support. Young people served by these programs are provided intensive, wraparound services. While services are intensive, service plans are individualized and often reduce in intensity over time.
Rapid re-housing	Rapid re-housing is short-term to moderate-term rental assistance for people who become homeless. The model was designed to move people quickly out of homelessness and into housing in order to reduce the harmful effects homelessness can cause in families and individuals. Rapid re-housing programs often use a progressive engagement approach to housing assistance, adjusting the amount of assistance provided to households based on their needs. Using a progressive engagement model allows tenants to be connected to more-intensive interventions, such as subsidized PSH, if this is needed as a relationship with the provider develops and needs continue to be assessed (National Alliance to End Homelessness, 2015a).	A core component of rapid re-housing projects is helping clients connect with supports in the community based on a client-directed housing stability plan (U.S. Interagency Council on Homelessness, 2015). Services might include SUD treatment, physical or mental health care, assistance to increase income through employment or benefits, and legal assistance. Some projects use peer support as part of housing stability teams. Tenants typically move into permanent rental housing, and supportive services are provided in-home, in locations in the community, or at the service provider. This model has been effective for families and veterans, and is increasingly being used for youth and other populations.
PSH	PSH is targeted to persons with chronic disabling conditions that challenge a person's ability to maintain housing independently without additional supports. PSH offers nontime-limited subsidized housing in combination with case management services and linkages to intensive services to help with disabling conditions. PSH is prioritized for people with the longest experiences of homelessness and the most severe service needs (HUD Office of Community Planning and Development, 2016). Tenants often have multiple service needs, and even if they are engaging in recovery services have other disabling conditions that make it difficult to maintain housing independently, such as traumatic brain injury or a serious mental illness.	PSH has effectively provided barrier-free housing for people with SUD, including people still engaged in substance misuse. Supportive housing providers have developed partnerships with medical providers to dispense medication for OUD and offer behavioral therapy at supportive housing locations rather than requiring visits to off-site clinics (Malone, 2017).

APPENDIX B. DATABASE SEARCH STRINGS

Database	Keywords	Date	Results Returned	Included Results
EBSCO	Homeless + “opioid use disorder”	10/15/17	12	1
Google Scholar	Homeless* + “opioid use disorder” + prevent	10/29/17	426	1
EBSCO	Homeless + opioid	10/15/17	394	17
EBSCO	Homeless* + prevent* + opioid	10/26/17	116	0
EBSCO	“housing first” + opioid	10/26/17	8	0
Google Scholar	“housing first” + opioid	10/29/17	395	9
EBSCO	“housing first” + opiate	10/26/17	2	1
EBSCO	“recovery housing” + opi*	10/26/17	22	3
EBSCO	Shelter + op* + homeless	10/26/17	721	2
EBSCO	“transitional housing” + opi*	10/26/17	13	0
EBSCO	“rapid re-housing” + opi*	10/26/17	64	0
EBSCO	Permanent + housing + opi*	10/26/17	22	0
EBSCO	Homeless* + MAT	10/29/17	25	0
EBSCO	Homeless* + “medication-assisted treatment”	10/29/17	11	1
Google Scholar	“recovery housing” + opi*	10/30/17	6	0
Google Scholar	Shelter + opi* + homeless	10/30/17	668	1
Google Scholar	“transitional housing” + opi*	10/30/17	47	2
Google Scholar	“rapid re-housing” + opi*	10/30/17	4	0
Google Scholar	Permanent + housing + opi*	10/30/17	8,130	1
Google Scholar	Homeless* + MAT	10/30/17	44,700	0
Google Scholar	Homeless* + “medication-assisted treatment”	10/30/17	812	3

APPENDIX C. GOVERNMENT AGENCY WEBSITE SEARCH STRINGS

Keywords	Date	Results Returned	Included Results
Department of Health and Human Services (HHS)			
opioid + homeless	10/23/2017	3,380	8
“opioid use disorder” + “housing”	10/23/2017	716	3
Substance Abuse and Mental Health Services Administration (SAMHSA)			
opioid + treatment + housing	10/23/2017	1,370	3
opioid + housing OR homeless	10/23/2017	96	1
opioids + “homeless prevention”	10/31/2017	1	0
“homeless prevention”	10/31/2017	7	1
Administration for Children and Families			
Opioid	10/23/2017	39	1
“opioid use disorder”	10/23/2017	3	1
opioid + housing	10/23/2017	3	0
opioid + homeless	10/23/2017	7	0
Administration for Children and Families, Family and Youth Services Bureau, National Clearinghouse on Families and Youth			
Opioid	10/23/2017	0	1
substance use disorder	10/23/2017	56	0
prescription drug	10/23/2017	20	0
Office of the Assistant Secretary for Planning and Evaluation (ASPE)			
Opioid	10/24/2017	3	3
Housing	10/24/2017	24	2
housing + substance use	10/24/2017	0	0
homeless + substance use	10/24/2017	0	0
Homeless	10/24/2017	48	0
Department of Housing and Urban Development (HUD)			
Opioid	10/24/2017	18	0
substance use + housing	10/24/2017	120	1
substance use + homeless	10/24/2017	99	1
Department of Justice			
opioid OR prescription drug + housing	10/24/2017	0	0
opioid OR prescription drug + homeless	10/24/2017	0	0
opioid OR prescription drug	10/24/2017	100+	3
Department of Veterans Affairs (VA)			
opioid + housing	10/24/2017	100+	1
opioid + homeless	10/24/2017	100+	7
U.S. Interagency Council on Homelessness			
Opioid	10/24/2017	9	5

APPENDIX D. NONGOVERNMENTAL ORGANIZATION WEBSITE SEARCH STRINGS

Keywords	Date	Results Returned	Included Results
National Alliance to End Homelessness			
Homeless + opioid	10/17/2017	10	4
homeless + medication-assisted treatment	10/17/2017	4	3
prevalence + opioid	10/17/2017	2	2
National Coalition for the Homeless			
Opioid	10/17/2017	0	0
Opiate	10/17/2017	0	0
substance use disorder	10/17/2017	3	0
medication-assisted treatment	10/17/2017	0	0
prescription drug	10/17/2017	2	0
substance abuse	10/17/2017	4	0
Corporation for Supportive Housing (CSH)			
homeless + opioid	10/17/2017	51	7
homeless + “opioid use disorder”	10/17/2017	5	1
homeless + “medication-assisted treatment”	10/17/2017	17	0
homeless + prevalence + opioid	10/17/2017	3	1
Downtown Emergency Service Center (DESC)			
opioid use disorder	10/17/2017	0	0
opioid	10/17/2017	1	1
Opiate	10/17/2017	0	0
“substance use disorder”	10/17/2017	10	0
medication-assisted treatment	10/17/2017	0	0
National Alliance for Recovery Residences (NARR)			
opioid OR opiate OR medication-assisted treatment OR residence OR housing	10/20/2017		7
National Health Care for the Homeless Council			
Opioid	10/20/2017	43	5
opioid + “medication-assisted treatment”	10/20/2017	8	3
Central City Concern			
opioids OR housing	10/20/2017	7	3

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OPIOID USE DISORDER, HOUSING INSTABILITY AND HOUSING OPTIONS FOR RECOVERY

Reports Available

CHOICE MATTERS: HOUSING MODELS THAT PROMOTE RECOVERY FOR INDIVIDUALS AND FAMILIES FACING OPIOID USE DISORDER

HTML https://aspe.hhs.gov/basic-report/choice-matters-housing-models-may-promote-recovery-individuals-and-families-facing-opioid-use-disorder

PDF https://aspe.hhs.gov/pdf-report/choice-matters-housing-models-may-promote-recovery-individuals-and-families-facing-opioid-use-disorder

CHOICES MATTER: HOUSING MODELS THAT MAY PROMOTE RECOVERY FOR INDIVIDUALS AND FAMILIES FACING OPIOID USE DISORDER REPORT HIGHLIGHTS

HTML https://aspe.hhs.gov/basic-report/choices-matter-housing-models-may-promote-recovery-individuals-and-families-facing-opioid-use-disorder

PDF https://aspe.hhs.gov/pdf-report/choices-matter-housing-models-may-promote-recovery-individuals-and-families-facing-opioid-use-disorder

HOUSING OPTIONS FOR RECOVERY FOR INDIVIDUALS WITH OPIOID USE DISORDER: AN ENVIRONMENTAL SCAN

HTML https://aspe.hhs.gov/basic-report/housing-options-recovery-individuals-opioid-use-disorder-literature-review

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To obtain a printed copy of this report, send the full report title and your mailing information to:

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Office of Disability, Aging and Long-Term Care Policy
Room 424E, H.H. Humphrey Building
200 Independence Avenue, S.W.
Washington, D.C. 20201
FAX: 202-401-7733

NOTE: All requests must be in writing.

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