Housing First for Homeless Persons with Active Addiction: Are We Overreaching?

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Context: More than 350 communities in the United States have committed to ending chronic homelessness. One nationally prominent approach, Housing First, offers early access to permanent housing without requiring completion of treatment or, for clients with addiction, proof of sobriety.

Methods: This article reviews studies of Housing First and more traditional rehabilitative (e.g., "linear") recovery interventions, focusing on the outcomes obtained by both approaches for homeless individuals with addictive disorders.

Findings: According to reviews of comparative trials and case series reports, Housing First reports document excellent housing retention, despite the limited amount of data pertaining to homeless clients with active and severe addiction. Several linear programs cite reductions in addiction severity but have shortcomings in long-term housing success and retention.

Conclusions: This article suggests that the current research data are not sufficient to identify an optimal housing and rehabilitation approach for an important homeless subgroup. The research regarding Housing First and linear approaches can be strengthened in several ways, and policymakers should be cautious about generalizing the results of available Housing First studies to persons with active addiction when they enter housing programs.

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In the United States, an estimated 671,888 persons were homeless on an average day in 2007, with 123,833 designated as chronically homeless (U.S. Department of Housing and Urban Development 2008). The health and mortality implications of homelessness have been well described (Cheung and Hwang 2004; Gelberg and Linn 1989; Hwang et al. 1997; Kertesz et al. 2005) and are associated with costly patterns of service utilization (Culhane, Metraux, and Hadley 2002; Meschede 2004; Salit et al. 1998). Addiction figures prominently among homeless persons in the United States. National data show that in the past year, 38 percent of homeless persons had problems with alcohol; 46 percent, with drugs; and 45 percent, with nonaddiction mental health disorders (Burt and Aron 2000).

Homelessness is not a new problem, and governmental policies have changed direction more than once in an effort to address it. Indeed, persons with addiction have figured in homeless-focused research since the Great Depression (Sutherland and Locke 1971), and such persons represent a controversial subpopulation, in part because of the tension between punitive and rehabilitative responses, both of which can be paternalistic in nature. In the 1950s, police "drunk tanks" were condemned as "revolving doors" (Pittman and Gordon 1958). A decade later, they were replaced with publicly funded detoxification programs, an innovation that failed to eliminate the revolving door but, arguably, "padded" it (Fagan and Mauss 1978). Amid the rising rate of homelessness in the 1980s, the McKinney Homeless Assistance Act of 1987 created federal funding streams for shelters, health, and housing programs. Shortly thereafter, federal funding mechanisms were reconfigured to favor communitywide integrated-funding applications (termed *Continuum of Care* plans). This funding configuration anticipates that homeless persons will enter and then graduate from a sequence of programs (shelter, transitional housing, permanent housing), with progress based on recovery toward self-sufficiency (Couzens 1997). Despite governing federal allocations since 1996, however, no reduction in homelessness was apparent over the next decade (U.S. Department of Housing and Urban Development 2007).

With the Continuum of Care funding mechanism still in place, the last decade has seen a major change in governmental emphasis and in the media's coverage of homelessness, with a new focus on *ending* chronic homelessness (Editorial 2002, 2003). At last count, more than 350 American communities had embarked on plans to end chronic homelessness. This new energy was spurred by important research, by advocates both inside and outside the government, and by the operational threat that communities without plans to end chronic homelessness risked a loss of federal funding.

In this context, policymakers have looked with increasing frequency to a new intervention that offers permanent housing first (i.e., "Housing First"), allowing a client's other problems to be worked on (if the client wishes) after securing a permanent residence. In contrast to more traditional programs (termed *linear* approaches), Housing First emphasizes respect for homeless individuals as consumers entitled to make choices and condemns homelessness itself as a social evil that, like slavery in the nineteenth century, should have no place in the United States today (McGray 2004; Tsemberis, Gulcur, and Nakae 2004). In short, Housing First represents an important break from traditional models that focus on "fixing" clients to make them "housing ready."

The Housing First approach has received much popular attention (Gladwell 2006; Swope 2005) in the major print and broadcast media (Graves and Safan 2007; Simon 2007), including national newspapers and magazines (Editorial 2003; Gladwell 2006; McGray 2004). The U.S. Interagency Council on Homelessness also is promoting the approach on its website (U.S. Interagency Council on Homelessness 2003), designating it as a "central antidote" to homelessness (U.S. Interagency Council on Homelessness 2008a). Two resolutions by the U.S. Conference of Mayors in 2008 endorsed it, and Housing First is the only intervention identified by the group as an "evidence-based practice" (U.S. Conference of Mayors 2008a, 2008b).

Within this wave of coverage, the imprimatur of scientific support has offered special authority. For example, when leaders in New Orleans considered a plan to adopt a more traditional rehabilitation-focused approach, they were derided as ignoring hard science favoring Housing First. "We can now solve anyone's homelessness," asserted one federal official (Reckdahl 2008, p. A1). New Orleans then reversed course.

One premise of this article is that the junction of scientific research and policy is fraught with risk. If findings are invoked incautiously

or are applied beyond the limits of the original research, then "overreach" will be the result. With overreach, outcomes may not correspond to projected benefits and risk the public's disenchantment. The extraordinary rollout of plans to end chronic homelessness, coupled with the excitement for Housing First, makes this a prudent moment to review the data supporting it, as well as the research regarding more traditional rehabilitative approaches. Both, as we will show, have limitations.

In proposing research-based solutions to homelessness, we are suggesting that policy responses should be framed not simply as "what works?" but as "what works for whom?" (Caton, Wilkins, and Anderson 2007). We begin by defining Housing First and also the more traditional "linear" approaches for homeless individuals, focusing on those persons for whom active addiction is an issue. Next, we summarize the research on Housing First, briefly explaining the cost-related arguments typically used in its favor.

We then turn to research on linear approaches to this population, including three conceptually distinct types of intervention, and then compare the strengths and limitations of Housing First and linear research. We believe that our present knowledge is incomplete with regard to housing persons with active addiction and that there is a risk of overreach, given the popular claims made on behalf of Housing First. Our perspective may appear controversial because its view of approaches that can also document some success is skeptical. The article concludes with suggestions to strengthen future research regarding both Housing First and linear approaches for persons with active addiction.

Definitions

Table 1 defines and summarizes the theories behind two contrasting approaches developed in response to homeless individuals.

When applied to chronically homeless individuals, Housing First refers to the rapid and direct placement of homeless individuals into permanent housing with supportive services available, but without service utilization or treatment required as a condition of receiving housing (Pearson et al. 2007; Tsemberis, Gulcur, and Nakae 2004). By separating the participation in or success of treatment from the provision of

TABLE 1
Contrasting Approaches to Housing and Rehabilitation of Chronically Homeless Individuals

	Types of Residential Support Utilized	Services Provided	Types of Clients Typically Included in Published Research	Addiction-Related Policies
Housing First	Housing is permanent. Types of housing provided vary with the program (multiunit dwellings, scattered site, private market).	Screening and needs assessment, housing assistance, varying levels of support services, case management, sometimes on-site medical or mental health care.	Chronically homeless with severe mental illness. Medical illness and/or history of addiction commonly noted.	Substance abuse services are offered. Abstinence and treatment participation are not required.
Linear approach	A continuum spanning emergency shelters with "in-house" treatment programs, addiction stabilization programs, transitional housing, sometimes followed by permanent supportive housing, group residence, or independent housing.	Services vary by setting, but substance abuse or psychiatric problem treatment is required.	Literally homeless. Persons with addictive and nonaddictive mental illness are typical.	Abstinence and treatment participation required and often measured as part of treatment.

permanent housing, Housing First programs target individuals who have declined rehabilitative treatment or for whom treatment has been unsuccessful (U.S. Interagency Council on Homelessness 2008a). Note that a Housing First approach also has been used with homeless families (Beyond Shelter 1993), but we will not discuss this here, as many of the details differ from those for individuals.

In contrast to Housing First, programs that move stepwise from rehabilitation settings to permanent domicile are known as *linear* approaches (Ridgway and Zipple 1990). Although *Continuum of Care* has been used to describe linear programs (Tsemberis, Gulcur, and Nakae 2004), we avoid this term, as it carries specific regulatory meanings related to funding from the U.S. Department of Housing and Urban Development.

Linear approaches have different designs and theoretical underpinnings, which usually reflect theories of human behavior change. Most linear interventions assume that a return to long-term stable housing, in either the private market or a subsidized setting, requires the restoration of behavioral self-regulation and the capacity to interact in a constructive social environment and also that an individual's tangible resource needs must be addressed in order to ensure that person's engagement and attendance (Sosin, Bruni, and Reidy 1995; Zerger 2002). Accordingly, the domiciliary support offered during linear approach rehabilitation programs typically is managed by treatment providers but is not permanent (Sosin, Bruni, and Reidy 1995). The acquisition of long-term permanent housing, including private-market or government-subsidized arrangements, is regarded as the end product of rehabilitative success. Indeed, many addiction scholars argue that housing, like employment, should be measured as one possible *outcome* of therapeutic interventions (McLellan et al. 1996), which contrasts with the emphasis of Housing First programs on early access to permanent housing, without demands for treatment success or sobriety (U.S. Interagency Council on Homelessness 2008a).

Next we compare these two approaches for homeless individuals with substance abuse disorders, focusing on housing and addictive outcomes and recognizing that the studies are not perfectly comparable, owing to differences in the methodology and the populations studied. Any problems we encounter when comparing existing studies should point toward more informative future research, and any underappreciated doubts about the evidence should help policymakers respond flexibly to an especially vulnerable population.

Methods

We looked primarily at comparative studies of Housing First and linear approaches to homeless persons with addiction and with or without concurrent nonaddictive mental illness. We found the studies through PubMed/Medline, PsycINFO, Google Scholar, government websites, and a review of health-oriented studies (Hwang et al. 2005). For our primary searches we used the terms *Housing First*, *homelessness*, *Continuum of Care*, *seriously mentally ill*, *substance abuse*, and *housing interventions*; and for our secondary searches we used the terms *homelessness*, *substance abuse*, *consumer choice*, *dual diagnosis*, *controlled trial*, *randomly controlled trial*, *abstinence outcomes*, and *retention*. We also searched websites focused for New York University Medical Center (originator of several key studies) and National Health Care for the Homeless Council. A full list of URLs is available from the authors. The articles we consulted were based on (1) the target population (homeless, with addiction or mental illness), (2) the use of quantitative data, (3) a comparative study design with randomized or pseudorandomized design assessing a linear or Housing First approach, and (4) the inclusion of housing outcomes. Several noncomparative studies (e.g., case series) were included if they had illustrative value not available through comparative research.

Housing First and Related Program Approaches

The expression "Housing First" was first used in 1999 by the National Alliance to End Homelessness. As applied to chronically homeless individuals, a Housing First approach initially contacts persons in outreach activities and then offers, but does not require their participation in, other services as part of gaining access to housing (Tsemberis and Eisenberg 2000). When single adults are placed into such permanent housing, they are periodically visited by case managers and specialized clinicians. The term *assertive community treatment* may be used if program staff make intensive efforts to engage their clients, advocate on their behalf, and/or arrange for services (Bond et al. 2001). This low-demand approach contrasts with programs known as *linear* approaches, which require clients to successfully undergo treatment as a prerequisite to

obtaining housing (Ridgway and Zipple 1990). Such programs have been criticized as making it difficult for clients to obtain long-term housing and thus risking their return to homelessness. Here we review two prototypes of Housing First from New York (Pathways to Housing) (Tsemberis and Eisenberg 2000) and San Francisco (Direct Access to Housing) (Corporation for Supportive Housing 2008; Kessell et al. 2006).

Persons Typically Served

Both the Pathways and the Direct Access to Housing programs accept homeless persons with severe mental illness and a history of substance abuse, that is, those persons who are the most vulnerable of the homeless population and who seem less likely to succeed in group rehabilitation programs. This criterion is exemplified by the heavy representation of the psychotically mentally ill in the New York program, 53 percent of one reported sample (Tsemberis, Gulcur, and Nakae 2004), with more than one-third recruited directly from psychiatric emergency rooms. According to national survey data, only 10 percent of homeless persons were hospitalized for mental health problems in the preceding year (Burt and Aron 2000).

San Francisco's Direct Access to Housing program similarly gives priority to single adults identified by evaluation teams affiliated with the San Francisco Department of Public Health, especially to persons well known to the public health system and showing evidence of substance abuse and/or psychiatric or medical problems, in accordance with the program's philosophy of "screening in" more challenging clients, as opposed to "creaming" for easier clients (Corporation for Supportive Housing 2008).

Participants in Housing First programs also differ from the homeless population at large in that 50 to 80 percent receive government cash benefits (usually health insurance), versus approximately one-third of homeless single adults overall (Corporation for Supportive Housing 2008; Pearson et al. 2007; Tsemberis, Gulcur, and Nakae 2004). Because addiction alone does not qualify individuals for disability-related Social Security support (the most common cash benefit), Housing First programs draw heavily on a homeless population with both medical and nonaddictive mental conditions.

Service Interventions

New York's Pathways to Housing program helps clients find an apartment, obtain a lease, and relocate. Clients are not required to participate in substance abuse or psychiatric treatment as a condition for obtaining the housing. After placement, an assertive community treatment (ACT) team, available twenty-four hours a day, seven days a week, offers continuous support. Clients take advantage of their help when they feel they need it. The team's services include community-based substance abuse treatment, psychiatric and general medical care, and vocational services. Clients are, however, required to participate in a money management program, to pay 30 percent of their income for rent, and to meet with staff twice a month. This approach emphasizes consumer choice and the reduction of harm from substance misuse (Greenwood et al. 2005; Tsemberis and Eisenberg 2000).

San Francisco's Direct Access to Housing (DAH) program places individuals into apartments in one of several large, multiunit residential buildings (with 1,100 units as of 2008), one of which is a licensed residential care facility with nursing service ("board and care"). The buildings are operated under a master lease arrangement by the city's Department of Public Health. Although the on-site services vary, they often include case management, primary medical care (including a health clinic that bills for health services), and mental health treatment. Tenants must spend 30 to 50 percent of their income on rent, and 80 percent of residents receive federal Social Security disability benefits. DAH tenants are not allowed to sell drugs or to use drugs or alcohol in any common area. But in keeping with the program's harm-reduction approach, abstinence is not a requirement (Corporation for Supportive Housing 2008; Swope 2005).

Published Outcome Data

New York's Pathways to Housing program has produced several studies demonstrating its success with severely mentally ill clients (Gulcur et al. 2003; Tsemberis and Eisenberg 2000; Tsemberis, Gulcur, and Nakae 2004). In a randomized controlled trial comparing Pathways to Housing with a control group consisting of unspecified usual care programs (termed *Continuum of Care*), clients in the Housing First trial group assessed at twelve, eighteen, and twenty-four months reported

greater percentages of time housed (80 percent to 90 percent of the preceding six months housed), in contrast to the control group, whose percentage of time housed did not exceed 40 percent (Tsemberis, Gulcur, and Nakae 2004). An earlier, observational study of the Pathways intervention found that 88 percent of 241 persons entering the Pathways Housing First approach remained housed at five years, versus 47 percent of 1,600 persons who entered a variety of residential programs in New York City (Tsemberis and Eisenberg 2000), most of which did not provide permanent housing. A later study showed that more participants remained in the program when a Housing First approach was implemented by the originator (Pathways to Housing) (78.3 percent at forty-seven months) and that fewer did when the program was implemented by other agencies (57 percent at forty-seven months) (Stefancic and Tsemberis 2007).

In the randomized trial, the Housing First and the control (Continuum of Care) trial groups were the same in regard to substance misuse (Padgett, Gulcur, and Tsemberis 2006; Tsemberis, Gulcur, and Nakae 2004). In addition, the Housing First participants used formal substance abuse and psychiatric services less often than the control group did. Since substance use was the same for the trial groups, but housing retention was better with Housing First, the authors concluded that there was "no empirical support for the practice of requiring individuals to participate in psychiatric treatment or attain sobriety before being housed" (Tsemberis, Gulcur, and Nakae 2004, p. 654).

Another Housing First program, San Francisco's Direct Access to Housing, reported that among 114 participants entering housing between 1999 and 2000, about three-fourths remained housed as of July 2001, in either the program's housing or similarly stable alternatives. Contrary to expectation, there were no significant differences in the overall use of health care in a comparison of housing program clients and 135 eligible persons not enrolled in Direct Access to Housing (Kessell et al. 2006). By contrast, an analysis of persons entering some of the same housing sites in the mid-1990s *before* the establishment of Direct Access to Housing, found a reduction in the use of the city's safety-net hospital when compared with twenty-five controls (Martinez and Burt 2006). These findings may reflect differences in the time period of the study, the types of individuals recruited, and the analytic methods used and so cannot be fully explained.

In addition to studies of individual model programs, a number of studies report findings across Housing First sites or, more generally, across supportive housing programs. Some caution is required in generalizing from such studies to Housing First approaches.

A long-term partnership between New York State and New York City (NY/NY) offers a variety of residential interventions for persons with severe mental illness. Studies have focused on tenure (Lipton et al. 2000) and costs (Culhane, Metraux, and Hadley 2002). The types of housing varied considerably with regard to services and tenants' expectations and included both supportive housing (i.e., permanent housing with separate services) and so-called community residences, that is, communal homes or transitional (i.e., eighteen to twenty-four months) residential treatment programs.

One analysis of NY/NY program entrants (1990–1995, $n = 2{,}937$) reported that 75 percent, 64 percent, and 50 percent of clients remained housed after one, two and five years, respectively (Lipton et al. 2000). Substance abuse consistently predicted shorter tenure across all types of residence. The wide range of residences suggests that although it would be difficult to consider the results typical of what pure Housing First programs can or cannot achieve, it does raise a cautionary note. Similar cautionary notes were raised by a German permanent supportive housing study in which severe substance abuse reduced housing tenure (Fichter and Quadflieg 2006) and by a Philadelphia study reporting substance abuse by 47 percent of persons whose departure from housing was characterized prospectively as "involuntary." Only 13 percent of persons who remained in the housing had a substance abuse problem (Wong et al. 2006). As with the NY/NY study, however, not all the supportive housing approaches were pure Housing First approaches.

More specific data are offered in a study of one-year outcomes from a federal collaborative initiative to house the chronically homeless, in which ten of eleven sites relied on a Housing First approach. Results show considerable housing success for the program's clients (Mares, Greenberg, and Rosenheck 2007). Outcome analyses included a follow-up before-and-after analysis of all participants ($n = 736$) and a comparative study of persons participating in five initiative-funded programs ($n = 296$) with persons in five alternative programs that were selected to represent "usually available" combinations of residential and support services, but specifically not Housing First ($n = 118$). In the larger follow-up analysis, 84 percent of the participants had a substance abuse

problem upon entering the program, but the severity of such problems was low. Most of the participants had both health insurance (79 percent) and cash benefits (70 percent). This follow-up analysis found increases in the number of days housed and declines in health care costs over one year. In the comparative analysis, at one year, the number of days housed (in the last ninety days), had risen (eighty-one versus fifty, $p < .001$) for persons offered collaborative initiative housing compared with the "usually available" programs. Curiously, neither client group was significantly more likely to be deemed "homeless" at one year, suggesting that persons in the alternative programs must have been living in residential settings not meeting the study's definition of housing. Of note, there were almost no differences in health status, health service utilization, or costs during follow-up. This finding was unexpected and may indicate that the engagement of chronically homeless persons in programs often is accompanied by a reduction in health service utilization, regardless of the kind of program offered.

According to a smaller analysis of eighty participants in Housing First programs, including some from New York's Pathways to Housing and two other programs (Pearson et al. 2007), 91 percent carried a major psychiatric diagnosis, and nearly all received federal disability benefits. Roughly half were judged by case managers to still be using drugs or alcohol, although "severe impairment" from substance use was uncommon (20 percent). Sixty-seven persons (84 percent) remained successfully housed for twelve months.

Housing First for Persons with Addiction

No studies have compared a Housing First with a non-Housing First approach for clients recruited on the basis of having severe addiction, although a case series from a Seattle housing program (known as 1811 Eastlake) published preliminary findings on-line from seventy-five severe alcoholics who were permitted to drink in their rooms (Downtown Emergency Service Center 2008). The program's services included voluntary medical and chemical dependency treatment, and of the seventy-five entrants, fifty (66 percent) remained housed for a year. The clients were reported to have accrued $2.5 million less in public service expenditures compared with the year preceding admission, although a formal calculation of program and capital costs is not publicly available. The Seattle

report, as well as reports from a Canadian shelter with on-site alcohol provided to refractory alcoholics ($n = 17$) (Podymow et al. 2006), suggests that some long-term refractory alcoholics can be housed and may even drink less if alcohol is permitted indoors in a secure setting.

Cost Arguments and Their Limitations

The assertion that direct housing interventions, including Housing First, can save money is common and has impressed policymakers (Gladwell 2006; Graves and Safan 2007; U.S. Conference of Mayors 2008b; U.S. Interagency Council on Homelessness 2008a). For the very sickest homeless individuals, for whom the chaos of life on the streets leads to repeated hospitalizations or incarcerations, housing and supportive services may in fact generate an overall reduction in costs to society. Formal studies of housing interventions offer a more nuanced picture, however, and cost savings are not automatic.

A cost-offset analysis of the decade-long NY/NY program is often cited in policy descriptions of the costs of housing interventions (U.S. Interagency Council on Homelessness 2007). As noted earlier, NY/NY housing configurations include both treatment-oriented residential programs and independent supportive housing. The cost analysis compared reductions (before-and-after) in service costs for persons placed in NY/NY housing (of any configuration) with service costs for several control groups who did not enter housing and were retrospectively matched based on administrative data (Culhane, Metraux, and Hadley 2002). Reductions in service use costs were greater for persons entering NY/NY housing, compared with nonparticipant controls. Reductions in the use of public services averaged $12,146, offsetting most, but not all, housing costs (net annual cost $1,425 per placement), provided that the tenant's income could cover $2,200 to $6,000 yearly, presumably from disability benefits.

This landmark study credibly substantiates the cost savings associated with housing placement. Important caveats (several noted by the authors themselves but rarely mentioned in public discourse) are that (1) the cost savings did not equal the cost of the housing interventions; (2) the reasons why comparison controls did not participate are not known, and it has been suggested that unmeasured adverse characteristics could have made them less eligible for or interested in such housing (Rosenheck

et al. 2003); (3) the applicability of this analysis to persons with primary or severe substance dependence is unclear, since persons with isolated or severe substance use disorders often lack the severely mentally ill (SMI) designation required for housing placement (and they are excluded from most cash benefits that would support the tenant's contribution); (4) analyses of whether substance use disorders influenced housing success were not reported and would have been difficult to conduct based solely on administrative data; and (5) the data are from a city with a well-funded public-service sector (i.e., New York City), where cost offsets may be easier to achieve.

As in the NY/NY study, a separate Veterans Administration study actually reported a modest increase in total societal expenditures when homeless persons were given long-term housing, since lower expenses in the health and judiciary systems were more than offset by the higher costs of housing and services (Culhane, Metraux, and Hadley 2002; Rosenheck et al. 2003). Discrepancies from two San Francisco studies were noted earlier (Kessell et al. 2006; Martinez and Burt 2006).

The challenge of estimating service costs for an itinerant population is an additional methodological burden for cost-savings analyses. Analysis of the Pathways to Housing trial included a methodological decision to exclude any days in which persons were unsheltered, on the assumption that such days could have entailed unmeasurable costs (Gulcur et al. 2003). For homeless individuals who incur few public service costs on the street, however, the true cost comparison could be less favorable to Housing First.

Similarly, a straight cost comparison of the annualized direct costs for supportive housing ($20,410) with the annualized costs of 365-day shelter occupancy ($24,269 to $43,530) (Stefancic and Tsemberis 2007) may be relevant to only those communities that already attempt to ensure access to a shelter every day of the year, as is the case in New York City. The United States as a whole, however, does not offer enough shelter beds (422,656 beds in 2007) to match the need (671,788 persons homeless each night) (U.S. Department of Housing and Urban Development 2008). Accordingly, annualized cost comparisons of shelter and housing may prove less compelling to decision makers who lack the prerequisite revenue, a situation greatly exacerbated by the economic downturn of 2008 (Bello 2008).

For this reason, a fundamental challenge confronts most cost-offset arguments related to housing homeless persons: a policy of helping persons

with complex needs usually invites new costs, unless communities decide to house just a few stratospherically expensive individuals, like "million-dollar Murrays" (Gladwell 2006). Concerns about the persuasiveness of cost-offset arguments in mental health have been expressed elsewhere (Goldman 1999) and are relevant here as well. Formal cost-effectiveness calculations (i.e., dollars spent per benefit obtained) lack the immediate market appeal of the simpler cost-savings argument but may ground future policy discussions more securely.

The Voucher Programs

Programs that expedite the provision of federally subsidized rental vouchers for severely mentally ill individuals occupy a middle ground between Housing First and linear approaches that focus on treatment first. Voucher recipients must initially offer to participate in rehabilitation, but the vouchers are rarely taken away from persons who do not participate. Enthusiasm for this approach is reflected in the federal government's issuing 20,000 such vouchers to veterans during 2008 and 2009 (U.S. Interagency Council on Homelessness 2008b). This intervention was studied in collaboration with the U.S. Department of Housing and Urban Development (HUD-VASH) for severely mentally ill homeless persons in San Diego (Hurlburt, Hough, and Wood 1996) and for veterans (Kasprow et al. 2000). Among the 460 veterans randomly assigned to one of three housing conditions, recipients of HUD-VASH vouchers were housed for 25 percent more days than a standard care group (59.4 versus 47.6 days in the preceding ninety) and 16 percent more than a case management–only group (59.4 days versus 50.8 days), differences that were statistically significant (Rosenheck et al. 2003). As in the Housing First studies from New York (Padgett, Gulcur, and Tsemberis 2006; Tsemberis, Gulcur, and Nakae 2004), there was no trial group difference in addiction outcomes. The analysis favored the voucher intervention, even in a subgroup of persons with substance use disorders (Rosenheck et al. 2003). But whether addiction adversely affected retention was not analyzed, and the retention of persons with drug abuse was not reported (Rosenheck et al. 2003).

The San Diego (nonveteran) study found that providing Section 8 housing vouchers to severely mentally ill persons did not reduce

homelessness over two years (Hurlburt, Hough, and Wood 1996). In addition, substance abuse at program entry increased the likelihood of a homeless outcome at two years, from 21 percent for persons without addictive problems, to 26 percent for persons with alcohol but no drug problems, and to 63 percent for persons with both drug and alcohol problems. Why housing was reduced is not clear. It is possible that substance misuse led to the loss of housing and/or that landlords refused to accept tenants with a history of addiction.

Linear Programs

The "linear" approach (Ridgway and Zipple 1990) anticipates that homeless persons with varying disabilities will enter rehabilitation-oriented programs with the long-term goal of returning to housing in either a subsidized or a private setting (including a return to family). Several rehabilitative programs, of varying theoretical origins, fit under this label. The linear approach generally makes rehabilitative treatment, typically residential, a prerequisite to permanent housing either in subsidized arrangements or through a return to the private market; the relative frequency of subsidized versus private housing outcome has not been formally studied, but both are common in samples we have studied (Kertesz et al. 2007; Milby et al. 2008). Subsidized permanent housing depends on the client's success in the program, which typically requires abstinence from drugs and alcohol. Linear programs may not directly control those permanent housing resources to which they refer their clients, and this lack of control can lead to uncertainty regarding ultimate housing outcomes. For individual clients, the failure to comply with the rules and requirements produces consequences that vary with the program's philosophy and resources and may include restriction of privileges, transfer to more closely supervised settings, or administrative discharge.

The focus of our review is those homeless individuals with a presenting or dominant problem of addiction, with or without concurrent mental illness. Next we describe the outcomes of studies aggregating outcomes of several linear programs and then review the outcomes data from three specific types of intervention assessed in randomized controlled trials.

Outcomes of Linear Approaches

Studies of the linear approach either aggregate outcomes across several unspecified community-based programs or examine specific treatment interventions.

The Pathways to Housing trial combined unspecified community programs (Continuum of Care), as the comparison group (Tsemberis, Gulcur, and Nakae 2004), with inferior housing outcomes for the comparison group representing the main trial finding noted by others (U.S. Interagency Council on Homelessness 2008a). An earlier observational study showed that clients in the linear programs were less likely to remain housed (47 percent at five years) compared with clients in Pathways to Housing (88 percent) (Tsemberis and Eisenberg 2000).

A separate prospective follow-up study from Chicago explored the outcomes for a collection of unspecified addiction treatment programs accessed through a centralized point of referral. The referral program linked homeless persons to agencies (e.g., Salvation Army, treatment-oriented shelters, and other short-term programs) that met both domiciliary and treatment needs for homeless clients (Stephens, Scott, and Muck 2003). This service arrangement is similar to that in many communities where the addiction treatment serves as a point of entry for homeless persons and treatment referrals for homeless persons are typically residential (O'Toole et al. 2004).

Of the homeless or marginally housed persons referred by the Target Cities initiative ($n = 305$), 63 percent were stably housed at twenty-four months, and 61 percent, after three years (Orwin, Scott, and Arieira 2005). For persons literally homeless at baseline, 50 percent were stably housed at twenty-four months. Although the addiction treatment was publicly funded, the treatment models were not described in detail and are likely to have varied. The Chicago study shares a limitation common to many linear approach studies, namely, a lack of detail regarding the availability of permanent housing after rehabilitative treatment.

As these two studies show, when an unspecified set of routine care programs are analyzed, the housing outcomes have been, at best, moderate. But it should come as no surprise that unspecified sets of usual care programs for homeless persons with addictions present less than ideal results. Despite a robust evidence base identifying principles for *effective* addiction treatment (National Institute on Drug Abuse 1999), the quality of American addiction treatment is undermined by widespread

discrepancies between the principles of effective treatment and what most clients typically receive (IOM 2006). Even more worrisome, the publicly funded systems that care for homeless persons are so underresourced that less effective care is the expected result. A national survey of 175 addiction treatment programs found that (1) the typical program director had no education beyond a bachelor's degree; (2) 15 percent of the programs stopped offering treatment during the period of the survey; and (3) 25 percent of programs reorganized under another agency or new ownership during the study, representing an extraordinary degree of organizational instability (McLellan, Carise, and Kleber 2003). Accordingly, studies that evaluate or compare unspecified, publicly financed rehabilitation programs cannot assume that effective treatments were offered at all. One plausible interpretation of suboptimal results is that current community-based rehabilitation programs do not have enough resources to deliver treatment interventions of proven efficacy.

Outcomes of Specific Linear Models

Scientific reports of programs for the social rehabilitation of homeless individuals with addiction date to the 1960s (Myerson and Mayer 1966). Three conceptually distinct models have accumulated significant research evidence: therapeutic communities (TC), social interventions (a category that often incorporates case management and some TC principles), and abstinent-contingent housing in combination with the community reinforcement approach (which we term the Birmingham model).

Therapeutic Communities (TC)

Therapeutic community programs offer a form of social treatment to drug abuse clients in a residential setting. Such treatment has been described as "an organized effort to resocialize the client, with the community as an agent of personal change" (Tims, Jainchill, and DeLeon 1994, p. 2). These communities see the addiction client as having social deficits that must be corrected experientially through a group-living environment that emphasizes structure, removal of the client from situations promoting drugs, confrontation, mutual self-help, and social

norms. Longer exposure to TC care is associated with greater reductions in drug use, and the duration required for therapeutic benefit varies from fifty days to more than a year (Condelli and Hubbard 1994). Perhaps because of the socially demanding nature of traditional TCs, attrition is high: a one-year retention of 10 to 30 percent (Condelli 1994) and 31 to 39 percent for homeless, shelter-based TCs (Liberty et al. 1998). To accommodate homeless persons with combined addictive and non-addictive mental illness (e.g., dual diagnosis), TCs have lowered their social demands, reduced direct confrontation, enhanced personal freedom, and provided greater social assistance (DeLeon et al. 2000). This modified approach achieved a one-year retention of 56 percent (most of those completing the treatment were then referred to a supportive housing program). Compared with a trial group of "usual" residential programs available to homeless persons in New York City, this modified TC significantly improved both drug/alcohol use and psychiatric status (DeLeon et al. 2000). The measured difference in subsequent housing status, though slightly favoring the modified TC intervention, was not, however, statistically significant (and the measure of housing itself was not clearly described) (Sacks et al. 2008). Other research has shown that homeless persons who complete TCs are less psychiatrically impaired and have superior work histories (Mierlak et al. 1998). In sum, TCs may help less impaired homeless substance abusers, but an improvement in long-term housing has not been demonstrated in comparative trials.

Social Interventions Research

Several controlled trials of interventions for homeless substance abusers, collectively termed *social interventions*, were completed in the early 1990s with funding from the National Institutes of Health (Stahler 1995). These studies included many treatment modalities common to community-based treatment programs, which receive more than 36,000 homeless admissions yearly (Office of Applied Studies, Substance Abuse and Mental Health Services Administration 2006). The interventions included case management, congregate living, vocational training, and, in some, tangible rewards for abstinence. The studies had moderate-to-large samples ($n = 149$ to 722). A summary of these studies noted the following (Stahler 1995):

1. Dropout rates were substantial across most studies (typically 50 percent or greater).
2. Substance use and other parameters (including housing) improved for the intervention and control groups for most trials. Control participants typically received services and/or tangible residential support, but of lesser intensity.
3. Treatment benefits, including reductions in drug use, tended to diminish over time.
4. Clients with more education and less severe addictive problems tended to achieve the best results.

One example of a trial with statistically significant findings is a three-group comparison of case management alone ($n = 96$), of case management with eight months of short-term housing ($n = 136$) and of a treatment-as-usual control arm in the city of Chicago ($n = 187$) (Sosin, Bruni, and Reidy 1995). Participants in all trial arms showed large reductions in the number of days of substance use from baseline to follow-up, with modest differences among the trial comparison groups. The average number of days of substance use (in the preceding thirty) dropped from 17.5 to 5.5 days at a follow-up, six months after the treatment ended. The differences between the weakest and strongest intervention groups was small, 2.5 days. Similarly, the number of days that participants were housed (in the last sixty) rose from eighteen at baseline to thirty-nine at a six-month follow-up, with trial groups differing by, at most, 5.7 days. Social interventions apparently helped some clients.

Other studies of social interventions predate the NIH-funded trials in the 1990s, in one case by decades (Myerson and Mayer 1966). This ten-year follow-up analyzed outcomes for alcoholic homeless men who had participated in group living, paid work, and medication therapy with disulfiram. After ten years, 56 percent had a stable residence, and most of the successful participants had returned to paid work.

Outcomes of a Model Linear Approach Program: Abstinence-Contingent Housing

One treatment model has been replicated in four randomized controlled trials in Birmingham. Abstinence-contingent housing exchanges an

apartment, during a six-month treatment period, for proof of abstinence while simultaneously offering paid employment and group-based therapeutic activities (Milby et al. 1996, 2000, 2005, 2008; Schumacher et al. 2007). This Birmingham model, developed for and tested on cocaine-dependent homeless persons, closely follows work rooted in behavioral analysis, which has found incentives ("contingency management") to be effective for addiction across a broad range of settings and populations (Higgins 1999; Prendergast et al. 2006).

In this approach, substance use is conceptualized as a learned behavior that, though harmful, is continued because of the rewards from the abused substance. Continued use imposes costs such as the loss of opportunities for other rewarding experiences including work, housing, and relationships. Treatment offers high-quality vocational, social, and recreational opportunities when the individual is sober (termed *community reinforcement*) (Azrin 1976) and removes these opportunities when the person is not sober. Treatment incentives reduce substance use during and after treatment (Higgins et al. 1995, 2000). Long-term abstinence may result when clients gain access to real-world rewards like work, housing, and social relations.

When applied specifically to homeless, cocaine-dependent treatment seekers in Birmingham, the data show both benefits from and limitations to this treatment-based approach (Milby et al. 1996, 2000, 2008; Schumacher et al. 2007).

In the Birmingham model, clients are provided a furnished apartment at a location separate from their treatment and employment activities. After the first week, continued access to the apartment is contingent on drug-negative urine tests. A drug-positive urine test results in the client's being taken to a local homeless shelter with an assured bed and daily transportation to daytime treatment activities. A week of documented abstinence enables the client to return to the program-provided apartment. This rigorous abstinence-contingent housing intervention lasts for six months (enforced abstinence for *permanent* housing management has not been tested). Six to eight hours each day are spent on behavioral treatment and employment training, including relapse prevention, paid employment, goal setting, and rewards for achieving objectively defined recovery goals as determined by peers and a counselor. Completion of the treatment is followed by a referral to private-market or publicly subsidized housing. This stepwise progression from treatment to long-term housing makes the Birmingham approach "linear."

Over the last twelve years, four randomized controlled trials and one meta-analysis of this model have been published (Milby et al. 1996, 2000, 2005, 2008; Schumacher et al. 2007). Each trial varied aspects of the treatment in order to identify which elements contributed to sobriety. Retention in treatment was found to be moderate to high. In the most recent trial, 65 percent of the participants completed a program lasting twenty-four weeks (Milby et al. 2008), a figure higher than the 50 percent for social interventions studies described earlier and comparable to twelve-month retention of 34 to 56 percent in modified therapeutic communities (DeLeon et al. 2000).

In all the trials, housing contingent on abstinence reduced drug use. In a meta-analysis of four randomized controlled trials, drug abstinence at six months (the end of treatment) was 32 percent higher, in absolute terms (58 percent versus 26 percent), for trial groups offered abstinence-contingent housing compared with trial groups offered only the day treatment (Schumacher et al. 2007). Housing stability and employment rose from baseline to six or twelve months in all trials, with the results differing by trial arm only when the interventions varied substantially in intensity. For example, six months after active treatment ended, an enhanced care group (receiving all the treatments just described) succeeded in being housed for fifty-four days (out of the last sixty), compared with two days in a usual care group (receiving day treatment only, $p < .03$) (Milby et al. 1996). Such trial arm differences were less pronounced in the three later studies in which all trial groups received variations of the active interventions identified in the first trial (Milby et al. 2000, 2005).

A policy-oriented analysis of the third trial created categorical outcomes for stable housing and stable employment at one year. Clients whose housing during the six-month treatment period had been contingent on abstinence ($n = 45$, with 42 percent stably housed) had better outcomes than did persons whose housing was provided but was not contingent on abstinence (33 percent of fifty-four) and than persons who had to find their own place to live during treatment (26 percent of thirty-nine). Although differences of this magnitude (i.e., 42 percent versus 26 percent) are clinically notable, they were not statistically significant ($p = .11$), perhaps because of the small number of participants (Kertesz et al. 2007).

A more recent analysis of the fourth Birmingham trial found that persons with longer periods of abstinence had stable housing long after

treatment ended. In the most recent trial, of those persons abstinent for twenty-eight or more weeks (one-quarter of the sample), 70 percent were still stably housed twelve months after the treatment ended (Milby et al. in press).

In summary, of the linear approaches, a model combining rewards for abstinence with community reinforcement supports retention and abstinence for persons with active and severe drug dependence. But even though many achieved long-term stable housing, a very significant proportion of clients did not.

Relative Strengths of Housing First and Linear Model Approaches

Both the Housing First and some linear intervention models have strengths. When implemented in model settings, the Housing First approach achieved exemplary housing stability for a vulnerable subgroup characterized by high rates of severe mental illness, and in one report, severe alcoholism (Downtown Emergency Service Center 2008; Tsemberis and Eisenberg 2000; Tsemberis, Gulcur, and Nakae 2004).

Studies of a variety of community-based linear model programs indicate that such programs also may be helpful (Orwin, Scott, and Arieira 2005; Tsemberis, Gulcur, and Nakae 2004). Retained clients cited a greater sense of safety and fewer problems fitting into the community (Yanos, Barrow, and Tsemberis 2004). The Birmingham trials show that drug use can be reduced with appropriate treatment (Schumacher et al. 2007). More stable long-term housing correlates with reductions in addictive behavior. In these trials, long-term housing was not as successful as hoped, perhaps because of the study environment, which we discuss later.

The successes of both approaches cost money, and the figures are informative even if they are not directly comparable, owing to differences in location, program purpose (permanent residence versus transitional support), and study method. For the 587 homeless entering (linear approach) service programs in fifteen jurisdictions, the average yearly bed costs were $14,000, $13,100, and $11,580 for emergency shelter programs, transitional housing programs, and permanent supportive housing, respectively (Wong, Park, and Nemon 2005). New York reported yearly bed costs of $17,277 for permanent supportive housing

(Culhane, Metraux, and Hadley 2002); savings in other parts of New York's service system nearly equaled these costs, as noted earlier. In the Birmingham model, the costs for six months of day treatment, work therapy, and housing (including unit construction or rehabilitation) were $11,543 per client in the first trial and $7,177 per client in the second (Schumacher et al. 2002).

Limitations in Research Data for Housing First

In the published research, the Housing First and linear approaches have demonstrated significant limitations, and acknowledging them should narrow the kinds of conclusions offered to policymakers and help avoid any overreach.

In comparative trials, well-resourced Housing First programs produce better housing outcomes compared with unspecified aggregates of unknown community-based rehabilitation programs, at least for persons with severe mental illness (usually reflected in the receipt of federal disability benefits). So far, in comparative trials, Housing First interventions have not yet been shown to reduce substance use (Mares, Greenberg, and Rosenheck 2007; Rosenheck et al. 2003; Tsemberis, Gulcur, and Nakae 2004). The finding that substance misuse was no worse in New York's Pathways to Housing group (compared with a linear model control) led the study's authors to question the utility of requiring sobriety or treatment (Tsemberis, Gulcur, and Nakae 2004). Generalizing these results to all chronically homeless, however, could be inappropriate, given what appears to be the relatively modest average addiction severity of clients entering most Housing First programs.

A secondary analysis of the Pathways to Housing data found that fewer than 20 percent of the intervention sample had more than four days of drug use (or twenty-eight days of alcohol use) in any six-month period, including at baseline (Padgett, Gulcur, and Tsemberis 2006). Neither the quantity of drug/alcohol intake nor the addictive consequences were measured. If the number of drinks per drinking occasion did not exceed four for men or three for women, this study's "heavy drinkers" would have fallen below the at-risk thresholds of the National Institute on Alcohol Abuse and Alcoholism (National Institute on Alcohol Abuse and Alcoholism 2005).

Similarly, in both the Veterans Administration voucher study and an evaluation of the federal chronic homeless initiative (Mares, Greenberg,

and Rosenheck 2007; Rosenheck et al. 2003), the mean Addiction Severity Index composite scores were (1) *lower* than what homeless veterans reported who identified themselves as having alcohol or drug problems (Zanis et al. 1994); (2) *lower* than what was observed in a large urban sample of addiction treatment seekers (Leonhard et al. 2000); and (3) *far lower* than among homeless persons seeking publicly funded addiction treatment (Kertesz et al. 2005). In short, the Housing First and voucher trials appear to have recruited severely mentally ill homeless persons whose addiction severity at housing entry was lower than normally seen in many homeless persons. That the majorities in some studies were nevertheless labeled as substance abusers (based on case managers' assessments or old records) (Mares, Greenberg, and Rosenheck 2007; Pearson et al. 2007; Tsemberis, Gulcur, and Nakae 2004) could reflect the remission achieved before the clients entered housing, or even misclassification.

We suggest that for homeless individuals with a prominent and active problem of addiction, the data on Housing First are mixed and unsettled. One case series does suggest that some Housing First programs are prepared to receive actively drinking alcoholics (Downtown Emergency Service Center 2008) (no similar data were reported for drug users). Conversely, the eleven-site federal collaborative initiative found an association between early access to housing and increases in alcohol problems during the subsequent year (Mares, Greenberg, and Rosenheck 2007). Several housing studies reported lower retention of persons with active addiction (Fichter and Quadflieg 2006; Hurlburt, Hough, and Wood 1996; Lipton et al. 2000). These mixed data underscore the need for caution when asserting to the public or policymakers that addictive status is not relevant to finding stable housing.

Limitations of Linear Approach Research

Well-resourced examples of evidence-based addiction treatment programs (such as the Birmingham example and modified therapeutic communities) have been shown to promote addiction recovery. However, long-term housing success, even when documented in comparative trials, falls well short of the 75 to 85 percent one-year figures obtained in Housing First studies. In addition, efficacious treatment interventions retain clients at rates ranging from 30 to 65 percent over study

periods of six months to one year. Longer-term outcomes at two or three years, studied in at least one large community cohort (Orwin, Scott, and Arieira 2005), were not evaluated in the randomized treatment trials.

In considering the modest rates of long-term housing success that the linear approach studies reported, it is possible that the published findings reflect limitations in the environments where homeless interventions have been studied and that better outcomes might be possible.

For example, the modest long-term housing success reported for linear programs in Birmingham (Kertesz et al. 2007), Chicago (Orwin, Scott, and Arieira 2005), and New York (in the non–Housing First group of the Pathways to Housing trial) (Tsemberis, Gulcur, and Nakae 2004) partly proves that providers of treatment services rarely control or influence the allocation of permanent housing resources. As a result, "treatment" does not always lead to "housing," even when the treatment is effective. In the analysis by Kertesz and colleagues, only 42.2 percent of Birmingham's abstinence-contingent housing clients were stably housed at one year. Such disappointing results may reflect a local policy restricting homeless persons' access to federally subsidized programs (Shelter Plus Care) by requiring three months of perfect abstinence (later revised to six months) (Kertesz et al. 2007), an outcome that is vanishingly rare among homeless persons recovering from cocaine dependence, even when they have substantially improved. In essence, housing authorities excluded from housing many of the persons that a federal subsidy (Shelter Plus Care) was designed to assist. The Birmingham research may be interpreted as demonstrating how unrealistic recovery expectations can impede housing success, even after efficacious treatment interventions. The better integration of abstinence-focused treatment with long-term housing management could remedy this situation in ways acceptable to both landlords and communities. Future research would be enhanced by incorporating "treatment experts" in the control and management of the permanent housing resource following treatment.

Discussion

This comparison of Housing First and linear approaches for homeless individuals with addiction highlights both the strengths and the research limitations of each approach, which in turn should limit the claims made to policymakers. Table 2 summarizes some of the major findings. For

TABLE 2
Summary Findings and Limitations Regarding Housing First, Voucher Programs, and Linear Approaches, with Key Studies Noted

Housing First Studies (and Related Variants)	
Housing First	Achieves excellent housing retention in population studied.
	Permanent supportive housing studies often show that combined housing and service costs are comparable or higher for individuals entering housing, versus persons not housed, with some exceptions based on the particular subpopulation and setting.
	Addiction severity not always formally measured but often lower than for homeless persons seeking addiction treatment.
Voucher Programs	
Voucher program studies	Rental vouchers result in greater time housed relative to case management.
	Substance abuse predicts reduced housing tenure.
	Overall costs appear to be higher for persons served with rental vouchers.
Linear Approach Studies	
Therapeutic communities (TC)	Addiction severity is reduced among retained participants.
	Retention in traditional programs is low.
	Programs modified for homeless persons can improve retention, reduce addiction severity, and slightly improve housing outcomes.
Social interventions	Addiction severity is not consistently improved.
	Housing outcomes typically improved in before-and-after comparisons, but not in trial arm comparisons.
Abstinence-contingent housing with community reinforcement approach (Birmingham model)	Combined models robustly reduce drug use during and after treatment period of six months.
	Housing status improves in before-and-after comparisons and in some trial-group comparisons.
	Overall percentage housed at one year is modest in the Birmingham studies.
	Discontinuities between the treatment program and housing system adversely affect outcomes.

Note: Examples of key research studies for each category are noted. A fuller description and bibliography are available in the text of this article.
Sources: Housing first: Kessell et al. 2006; Mares, Greenberg, and Rosenheck 2007; Padgett, Gulcur, and Tsemberis 2006; Tsemberis, Gulcur, and Nakae 2004.
Voucher studies: Hurlburt, Hough, and Wood 1996; Rosenheck et al. 2003.
Therapeutic communities: DeLeon et al. 2000; Mierlak et al. 1998.
Social interventions: Sosin, Bruni, and Reidy 1995; Stahler 1995.
Abstinence-contingent housing: Kertesz et al. 2007; Milby et al. 1996; Schumacher et al. 2007.

individuals with severe and active addiction, the evidence is sufficiently mixed and incomplete that assertions that scientific evidence shows how to "solve" homelessness should be greatly tempered (Reckdahl 2008). We believe that the underlying research data reveal several limitations that have received almost no attention from the popular media or influential public agencies (Gladwell 2006; Simon 2007; U.S. Conference of Mayors 2008b; U.S. Interagency Council on Homelessness 2003).

The Housing First and related permanent housing interventions reported in the literature generally have supplied housing for persons whose primary problem is a nonaddiction psychiatric disorder (Kessell et al. 2006; Rosenheck et al. 2003; Tsemberis, Gulcur, and Nakae 2004). Because the severity of substance misuse in these studies has been moderate, the published research currently offers less insight into how such programs might work for persons with severe and active substance misuse.

Because at least one case series documents significant retention of active alcoholics in housing (66 percent at one year) (Downtown Emergency Service Center 2008), it would be premature to conclude that Housing First programs *cannot* accommodate persons with severe addiction. But it also would be premature to suggest that research data provide clear guidance on whether, or how, Housing First programs *can* accommodate persons with ongoing severe drug and alcohol abuse. In the absence of research data on this subject, it is reasonable to consider the kinds of risks that may occur in Housing First programs. One potential risk would be worsening the addiction itself, as the federal collaborative initiative preliminary evaluation seemed to suggest (Mares, Greenberg, and Rosenheck 2007), or failing to progress toward addictive recovery.

Other housing clients and property may also be at risk. In this regard, the experience of the Birmingham research group in offering housing without requiring abstinence may be instructive. In the third Birmingham study, two of the trial groups were housed in the same complex of apartments, regardless of whether they were required to prove continued abstinence with clean urine tests (Milby et al. 2005). After approximately sixty participants entered, the trial was stopped and reorganized. The reason was that clients who were required to maintain abstinence began abandoning the provided housing, complaining that their proximity to persons not required to remain abstinent (i.e., the other trial group) was detrimental to their recovery. They claimed that they preferred to

return to homelessness rather than live near drug users. This unexpected reaction shows one possible risk to housing persons with active addiction. Such risk does not mean Housing First *cannot* succeed with drug users, but it justifies caution until future research shows how to mitigate this risk.

Ways to Strengthen Future Research

Future studies of Housing First would be strengthened by recruiting persons with severe and active addictive disorders, more rigorously assessing addiction, and determining whether addiction treatment (when offered) conforms to evidence-based principles (National Institute on Drug Abuse 1999).

Studies of unspecified collections of linear approach programs could be improved by including formal measures of addiction severity and the treatments provided. When these elements have been closely examined, as in the Birmingham and modified Therapeutic Community studies (DeLeon et al. 2000; Schumacher et al. 2007), improvements in addiction severity have been found. Only one of the Birmingham studies (Milby et al. 2008) measured housing outcomes after one year, so longer-term follow-up would help (the need for such follow-up needs to be recognized by research-funding agencies). Because linear interventions rely on external community-based housing resources, clients' experiences with those resources should be recorded systematically, including potential barriers related to housing resources like the Shelter Plus Care program.

The one Housing First study using a truly randomized controlled trial design represents an ideal worthy of replication in more severely addicted samples (Tsemberis, Gulcur, and Nakae 2004). At least one other randomized trial has been completed for persons with serious medical conditions, but the results have not yet been published (Barrett 2008).

Reliance on self-reports for substance use limits the usefulness of the current Housing First literature (Padgett, Gulcur, and Tsemberis 2006; Tsemberis, Gulcur, and Nakae 2004), given the reality of underreporting (Eyrich, North, and Pollio 2001). Drug testing, formal severity assessments, and diagnostic interviews would more accurately portray the course of addictive and other symptoms.

In general, future research must try to resolve those limitations resulting from the tendency of linear and Housing First studies to recruit homeless persons with different morbidities. Most of the linear approach studies examine persons with severe and active substance dependence. Even though other psychiatric disorders are common (Kertesz et al. 2006), persons with psychotic mental illness are not. Conversely, Housing First studies commonly look at government-recognized severe mental illness. A crude but credible indicator of how greatly these study samples differ is that only a few of the Birmingham addiction treatment samples obtained federal disability benefits (Kertesz et al. 2007). As previously noted, 70 percent of Pathways to Housing clients (personal communication, Ana Stefancic, August 3, 2007) and 80 percent of San Francisco's Direct Access to Housing clients obtained such benefits (San Francisco Department of Public Health 2005). Federal policy awards disability benefits for nonaddictive mental illness, but not for addiction.

Conclusion

The Housing First and linear approach studies differ significantly in both outlook and research method, resembling a conflict of paradigms (Andrich 2004; Kuhn 1962). Kuhn defined paradigms as mutually reinforcing sets of assumptions about how to solve scientific problems, with new paradigms arising to address problems that earlier paradigms could not. Proponents of different paradigms cannot fully engage the other points of view because of their different assumptions about problems worth solving, their different vocabularies and problem-solving methods, and their different experience and training. A paradigmatic conflict could be found in the Housing First and linear models of homeless intervention in that they apparently (1) target different primary problems (housing versus health/addiction), (2) apply different methods and measures (e.g., policy interventions versus clinical interventions), and (3) emerge from substantially different scholarly backgrounds (housing policy versus behavioral psychology). In addition, the two paradigms are easily mapped onto contrasting social messages (e.g., "housing is a human right" and "treatment works"), both of which can have a useful political effect. Despite the appeal of the analogy, we are not persuaded that these two veins of policy-relevant research are directed toward fundamentally different goals or that either is incapable of using the

methods and measures of the other. Homeless patients and providers, and the communities in which they find themselves, rarely pursue just one objective (housing versus recovery). No community is obligated to offer only one form of intervention, and we suggest that it would be harmful for communities to constrain themselves in that fashion. It is for this reason that both linear and Housing First investigators have attempted to assess both types of outcome, even if they have not used the best measures.

Future research should include both types of intervention, preferably in randomized controlled trials, with appropriate measures for both addiction and housing outcomes, as well as an analysis of how interventions apply to the particular vulnerabilities and preferences of individual clients. Researchers and other stakeholders should acknowledge the limitations of what has been shown to date through research and consider the risks of overreach when extending either linear or Housing First approaches to populations for which the data are, at present, insufficient. Not to do so risks long-term disappointment should a program's results fail to match the public's expectations.

Note: While this article was in press, two studies referenced from preliminary reports (Downtown Emergency Service Center 2008; Barrett 2008) were published in final form (Larimer et al. 2009; Sadowski et al. 2009). The first author has reviewed and commented on these final publications (Kertesz and Weiner 2009). He does not feel they substantially alter the interpretations offered in this article.

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