

Lessons for Conducting Experimental Evaluations in Complex Field Studies: Family Options Study

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Abstract

This article examines lessons learned from the implementation of the Family Options Study, a multisite randomized controlled trial designed to measure the relative impacts of various housing and services interventions for homeless families. The study team addressed several challenges in executing the experimental design adopted for the study, including identifying interventions for study, selecting study sites, addressing ethical considerations, and implementing random assignment. The article highlights four key lessons that emerged as the study team addressed these challenges that can inform future experimental research. First, the study illustrates the importance of flexibility in research design when studying existing assistance models rather than testing a demonstration program in which the interventions are uniformly executed. Second, site selection can be a lengthy iterative process that requires creativity and adaptations to local constraints. Third, the Family Option Study shows that ethical considerations can and must drive experimental research design decisions, particularly when studying programs that serve vulnerable programs. Finally, the study design demonstrates that participant intake and random assignment can be adjusted to account for varying program rules, while still allowing for rigorous impact analysis.

Introduction and Study Objectives

The U.S. Department of Housing and Urban Development (HUD) sponsored the Family Options Study to develop evidence to inform policy decisions about the best ways to resolve homelessness for families with children. The study was also intended to help community planners and local practitioners examine homeless assistance systems to optimize limited resources for assisting families.

When the Family Options Study launched in 2008, previous research was limited by lack of direct comparisons of different housing and services interventions for homeless families. Prior studies had explored the characteristics and needs of homeless families and some observational studies contributed lessons about program implementation and outcomes for families who use specific types of programs. To our knowledge, no evidence existed prior to the Family Options Study about the relative effectiveness of alternative types of programs on the outcomes of interest, including housing stability, family preservation, self-sufficiency, and adult and child well-being. A systematic review of literature on family homelessness completed before the results of the Family Options Study were available highlighted the paucity of rigorous studies and lack of evidence about intervention effects. The author of that review noted, “substantial limitations in research underscore the insufficiency of our current knowledge base for ending homelessness” (Bassuk et al., 2014: 457).

This article examines lessons learned from the implementation of the Family Options Study. The study team addressed several challenges in executing the experimental design adopted for the study, including identifying interventions for study, selecting study sites, addressing ethical considerations, and implementing random assignment. The strategies applied to overcome these challenges can inform future experimental research.

Why Random Assignment?

Considerations of feasibility and ethics led initial study designers at HUD to favor an observational, rather than an experimental study design. An observational study would examine outcomes for the families who participated in the different types of assistance selected for study. The results of an observational study would describe the program models and outcomes for families who participated but would not produce unbiased estimates of the relative effects of the alternative types of assistance. In an observational study, people choose to enroll in a particular intervention or are assigned by program staff. These processes result in different interventions being applied to groups of people who may differ from one another in both observed and unobserved ways.

An alternative to an observational study design is experimental design, which uses random assignment to determine which type of assistance is offered to which families. The strength of the random assignment design is that it produces equivalent families receiving different intervention models, isolating the effect of the interventions separate from all other factors. Randomized controlled trials are viewed as the gold standard in policy research and the preferred method for program evaluation (Orr, 1999). Although observational and quasi-experimental study designs suffer from selection bias, experimental study designs minimize systematic differences between

experimental groups that could bias impact estimates. In large samples, the preexisting differences, both observed and unobserved, among two or more groups that are randomly assigned approach zero. Thus, significant differences in group outcomes will reflect the influence of the interventions. Results from an experimental evaluation therefore offer decisionmakers strong evidence about the causal effects of policy interventions. Designing and executing an experimental evaluation, particularly in a heterogeneous service delivery environment with a highly vulnerable population, can pose challenges however.

In particular, carrying out the experimental design adopted for the Family Options Study posed four specific challenges that are the focus of this article. First, the study was not conducted as a demonstration that tested a new assistance model, therefore the study team and HUD needed to define the housing and service interventions to examine based on the kinds of assistance operating when the study was implemented. This approach offered several advantages, but also some disadvantages, and required adaptations along the way. Second, the random assignment plan imposed several requirements on the service providers and their communities that agreed to participate in the study. The study team had to employ an iterative process to identify communities and determine which met the study selection criteria. The team then engaged in extensive negotiations to encourage candidate sites to participate and to develop intake procedures that complied with the study's requirements. Third, research ethics considerations were of particular concern given the vulnerability of the study population. The approaches used to address ethical considerations offer lessons for future experimental research with similar populations. Finally, the Family Options Study faced substantial challenges implementing random assignment given the variation in homeless assistance program availability and participant eligibility requirements. Despite these challenges, the study team believed that a randomized impact study could be achieved and that the substantial advantages of experimental evidence far outweighed the added complexity and the implementation adjustments that were needed to carry out the study design.

Defining the Housing and Service Interventions To Examine

Varying implicit theories and hypotheses about the different types of assistance offered to families experiencing homelessness, coupled with a lack of evidence about program effects, left policymakers uncertain about which type of assistance to prioritize. HUD chose to examine existing models of housing assistance to homeless families, rather than experimenting with new models. Studying existing models offered several advantages. For example, the study results, although not obtained from a representative sample of communities, are likely to apply to homeless services as actually implemented in communities. Further, unlike demonstration programs, existing programs have already demonstrated their acceptability in communities and would be easier to expand if proven effective. On the other hand, because the study examined a program already operating, the study team had to define the core features of each model as commonly operated and to recruit programs that fit those definitions. Participating service providers agreed to continue providing the services with their existing resources but to allocate services to families on the basis of random assignment.

The study team and HUD canvassed communities across the country to assess the range of homeless and housing assistance available to families who experience homelessness. This review

highlighted variation in the level and time period for rental subsidies, presence and type of social services, type of housing and setting, and program requirements. The study team and HUD defined interventions for the study based on the distinguishing features hypothesized to affect family outcomes, prevalence of alternative models, and feasibility of securing adequate numbers of program slots to provide sample sizes needed to conduct the study.

What Kinds of Assistance Did the Homeless Assistance System Provide When the Family Options Study Was Initiated?

The 1987 McKinney-Vento Homeless Assistance Act¹ established the foundation for the current homeless assistance systems. The act funded HUD to develop more sophisticated services than were previously available for people experiencing homelessness (Burt et al., 2002). Shelter conditions improved, and many programs added services to address homeless families' barriers to maintaining housing. The McKinney-Vento Act was amended in 2009 to consolidate former homeless assistance grant programs into the Continuum of Care (CoC) program. Both the amended act and the CoC Program regulations formally define the CoC, a group of representatives from organizations within a specified geographic area, and the CoC responsibilities, including homeless services system design, resource allocation, and system management.

CoC program-funded homeless assistance programs have residential and service components but are generally grouped according to their residential component rather than the types of nonresidential supportive services offered. The residential programs that were part of the homeless assistance system in 2008, when the Family Options Study began, were categorized as emergency shelter, transitional housing, or permanent supportive housing. Emergency and transitional housing programs are time limited and rely on families moving on to stable housing situations, either subsidized or unsubsidized. Permanent supportive housing programs offer permanent rent subsidies coupled with intensive services but are available to families only when a parent has a qualifying disability.

Emergency Shelters

Emergency shelters typically serve as the first response to homelessness. Shelters for families frequently are open 24 hours per day and provide shelter in congregate settings with communal sleeping and eating spaces. In some emergency shelters, however, families may have individual rooms or apartments. Shelters vary in the amount and type of services they provide. Some shelters provide only basic services (such as meals, showers, clothing, and transportation), whereas other shelters provide basic services plus case management and referrals to specialized services (such as employment services or mental health and substance abuse treatment). Throughout the country in 2013 (shortly after enrollment was completed), 118,104 emergency shelter beds were available for people in homeless families (HUD, 2013).

Transitional Housing

Transitional housing programs offer homeless families places to stay or rent subsidies with supportive services for longer periods, generally 6 to 24 months. Often families are referred to transitional

¹ Pub. L. 100-77. 101 Stat. 482, 42 U.S.C. § 11301 et seq. July 22, 1987.

housing from emergency shelter when shelter workers determine they need more intensive or longer-term assistance and meet eligibility criteria. Transitional housing programs may be rooms or apartments offered to several families in the same building, termed *project-based* transitional housing, or PBTH. Sometimes the housing is in clustered or scattered locations where the program maintains the lease and program participants must leave on completion of the program. This model is referred to as *scattered-site* transitional housing. Sometimes the housing is in scattered locations where families rent their own apartments with temporary financial assistance from the program and where they can stay after the transitional program ends, paying rent on their own. This model is called *transition in place*.² The 2013 Annual Homeless Assessment Report (AHAR) reports a total of 101,843 transitional housing beds for people in homeless families. This number represents the sum of beds in project-based programs and scattered-site programs. Separate counts for the number of beds in the three types of transitional housing—project based, scattered site, and transition in place—do not exist. As expected, AHAR data show that stays in transitional housing are longer than those in emergency shelter. The median value for a family's stay in transitional housing during a single year was 151 nights in 2013 compared with 32 nights for emergency shelter (HUD, 2013).³

As is the case for emergency shelters, services provided through transitional housing vary substantially from one program to another. Services offered in transitional housing may be more intensive than the services offered in shelters and may include case management and referrals, benefit acquisition and retention, education and employment services, and mental health and substance abuse treatment. Transitional housing programs may sometimes include family reunification, childcare, and children's services, as well. The goal of most transitional housing programs is to help families resolve psychosocial challenges or housing barriers so that they will be able to maintain stable housing at program completion. Some transitional housing programs also help families to access mainstream housing assistance funded outside the homeless assistance system.

Permanent Supportive Housing

Permanent supportive housing programs are often similar to the more independent forms of transitional housing, except that no time limits are associated with the housing or services. Permanent supportive housing programs funded by HUD require participants to have severe and persistent chronic disabilities to be eligible. Housing models in permanent supportive housing vary from scattered site apartment units or single-family homes to small-scale group homes to multiunit developments, such as those funded through the Low-Income Housing Tax Credit Program.

The study team initially proposed studying an intervention consisting of programs that offered a long-term subsidy in conjunction with social services to provide a test of the incremental effects of services compared with long-term subsidy without services. However, information gathered during site recruitment showed that this model of assistance for families was primarily funded by HUD, thus including this intervention would have required most communities in the study to develop a new model that served families who did not have a qualifying disability. The experimental design

² Burt (2006) offered a thorough description of the range of transitional housing programs.

³ AHAR uses a 1-year reporting period; therefore, PBTH stays that last longer than 1 year are truncated. As a result, the actual median length of stay is likely higher than the figure reported.

would also have required communities to make this more resource-intensive assistance available to all families randomly assigned to receive it, even if the families were not perceived to need it. In essence, including this model would have reallocated this type of assistance from families who were perceived to need it, something that the team concluded would have been difficult to achieve and would have posed ethical concerns. The judgment of the study team was that a long-term subsidy plus services intervention was unlikely to be implemented by CoCs nationally on a large scale for all families. As a result, findings about the effects of this type of assistance would be less relevant for policy than findings about the relative effects of the other interventions that were available to families in shelter.

The team also noted that most HUD expenditures for services were made through the transitional housing program model. Thus, project-based transitional housing intervention was an appropriate way to test the impact of services expenditures. Because of all these factors, the study team modified the initial study design to omit a long-term subsidy plus services intervention. Families eligible for permanent supportive housing programs in study sites where that type of assistance was available were excluded from the study and referred to permanent supportive housing programs instead. If families were eligible for permanent supportive housing, but none existed, or there were no openings in the community, they were offered the opportunity to enroll in the study.

Short-Term Rental Subsidies

The Homelessness Prevention and Rapid Re-Housing Program (HPRP), funded through the American Recovery and Reinvestment Act (ARRA) of 2009,⁴ provided short-term rent subsidies to families experiencing homelessness.⁵ ARRA was signed into law during the design phase of the Family Options Study and infused communities across the country with a significant amount of new resources. Initially, the study team did not plan to investigate short-term rent subsidies, as prior to HPRP; this type of assistance was not available on a large scale. However, when HPRP entered the homeless assistance landscape on a large scale, the study team and HUD modified study plans to include this type of assistance as one of the active interventions while site recruitment was in progress. The advent of HPRP also contributed to the team's decision to omit the long-term rent subsidy plus services intervention initially contemplated.

The short-term subsidies that the Family Options Study analyzed typically lasted up to a maximum of 18 months, with quarterly recertification of eligibility. These short-term rent subsidies provided some services, usually limited to assistance locating housing, maintaining tenancy, and increasing self-sufficiency. The goal was to offer each family the level and length of assistance needed only until the family could pay market rent. Toward that goal, subsidies were individually structured and could be shallow (that is, not necessarily reducing families' housing costs to as low as 30 percent of income) and short term in duration.

Short-term rent subsidies continue to be offered as a component of rapid re-housing programs that operate with funding from HUD's CoC program and Emergency Solutions Grants program, the U.S. Department of Veterans Affairs' Supportive Services for Veteran Families Program, and other

⁴ Pub. L. 111-5. 123 Stat. 115. February 17, 2009.

⁵ In Boston, a state program that offered assistance very similar to HPRP provided the short-term rent subsidies.

sources. Current requirements allow for up to 24 months of assistance and permit communities to set the period for recertification. Rapid re-housing programs also offer case management and short-term financial assistance in addition to short-term rent subsidies.

Long-Term Rental Subsidies

Federally funded long-term rent subsidies for low-income households are operated outside the homeless assistance system, but families experiencing homelessness when the Family Options Study was initiated might, if on waiting lists for this type of assistance, have gained access to a long-term rent subsidy. This type of housing assistance is typically provided in one of three ways. First, some households live in housing developments that are owned and operated by public housing agencies (PHAs) and are known as public housing. Second, some households receive housing assistance through the Housing Choice Voucher (HCV) program. The HCV program provides tenant-based rent subsidies that families can use to rent market-rate housing in the community. Third, housing assistance is sometimes provided in privately owned housing developments for which HUD provides rental assistance through contracts with private owners. All three of these forms of housing assistance (1) are indefinitely renewable, as long as the family remains eligible, and (2) have a common benefit structure that caps families' monthly costs for rent and utilities at approximately 30 percent of income. This form of housing assistance is often referred to as a deep rent subsidy.⁶ In an experimental study of the effects of vouchers for a sample of households on voucher waiting lists, Mills et al. (2006) showed positive effects of voucher assistance in reducing and preventing homelessness. Evidence from that study, coupled with open questions about the extent to which families who experience homelessness could qualify for voucher assistance, lease up with a voucher according to regular HCV program rules, and maintain housing assistance without specialized services, made this type of assistance an important focus for the Family Options Study. To include long-term rent subsidies in the study, one or more PHAs in each community had to commit up to 50 turnover vouchers to the study. More specifically, PHAs were required to amend their administrative plans to establish a limited preference for study families who were randomly assigned access to this type of assistance through the study.

Interventions Studied

Taking into account the types of assistance available at the time the study was initiated, the Family Options Study examined three active interventions distinguished by the duration of rental assistance, housing setting, and services offered, contrasted with the usual care available in the community. Priority access to particular types of programs meant that families were given immediate access to a program slot reserved for them in a particular program.

- **Long-term rent subsidy (SUB)**, in which families have priority access to a long-term rental subsidy for housing in the conventional market, typically an HCV. Priority access to long-term rental subsidy could include assistance to find a unit that qualified for the HCV program but no other supportive services.

⁶ The term *deep rent subsidy* distinguishes this type of housing assistance from the shallow rent subsidy provided in housing developments funded by the Low-Income Housing Tax Credit Program or the HOME Investment Partnerships Program.

- **Short-term rent subsidy (CBRR)** in which families have priority access to a rent subsidy lasting up to 18 months. The short-term subsidies were paired with limited, housing-focused services to help families find and rent conventional, private-market housing.
- **Project-based transitional housing (PBTH)**, in which families have priority access to a temporary, service-intensive stay, lasting up to 24 months, in a project-based transitional housing facility owned or managed by the transitional housing program. The project-based transitional housing included comprehensive social services such as assessments, job-related services, counseling, substance use treatment, and family- and child-oriented services.⁷
- **Usual care (UC)**, in which families do not have priority access to any particular program. Usual care consisted of whatever housing or services a family accessed in the absence of immediate referral to the programs offered to families assigned to the other interventions. Because all families were recruited from emergency shelter, usual care typically consisted of continued stays in the emergency shelter until families were able to make other arrangements on their own or with the assistance of service providers. Families in shelters also received case management and services similar to those received by families assigned to the project-based transitional housing intervention.

Study Sample

National data show that nearly one-fourth of families leave emergency shelter in 1 week or less, and the study was intended to examine the experiences of families who were not able to resolve a housing crisis in this period.⁸ The intensive interventions analyzed in the study were not deemed appropriate for families with transitory needs that could be resolved with shelter stays lasting fewer than 7 days, thus the study recruited families who had stayed in emergency shelter for 7 or more days. Altogether, 2,282 families enrolled in the Family Options Study in 12 communities.

Identifying and Recruiting Sites

The experimental study design made fairly substantial demands on providers in the local homeless assistance system. In addition, broad participation among the emergency shelters, rapid re-housing programs, transitional housing programs, and PHAs in a community was necessary to provide a rigorous test of the interventions in the experimental framework. The study team thus had to negotiate with a large group of stakeholders and program providers to gain the cooperation of the entire homeless assistance service system in a community—the definition of a site. The team then negotiated with each provider to develop participant intake, random assignment, and program referral procedures that fit with the random assignment design needed to produce experimental evidence, while also addressing program staff concerns to the greatest extent possible. This section describes the iterative process used to select study sites and the adjustments made when initial expectations changed.

⁷ Transition-in-place transitional housing shares many of the same characteristics as short-term rental subsidies. Therefore, the study did not refer families to transition-in-place type transitional housing programs in order to provide a stronger contrast between the offer of project-based transitional housing and short-term rent subsidies provided by rapid re-housing programs.

⁸ Data, which are from the 1-year period from October 1, 2011, to September 30, 2012, show that, in 2012, 25 percent of people in families stayed 7 days or fewer in emergency shelter, 53 percent stayed from 1 to 6 months, and 10 percent stayed more than 6 months in the reporting period (HUD, 2013).

Initial plans anticipated 12 sites and a sample of up to 2,400 families enrolled during a 12-month period, evenly allocated by site and random assignment arm.⁹ After the study interventions were defined and short-term rent subsidies replaced the long-term rent subsidy plus services intervention, the study team proposed expanding the sample to 3,000 families. However, about 6 months after enrollment began, the team reduced the enrollment target to 2,550 based on the actual numbers of families who entered emergency shelter in the participating sites. The study team and HUD also agreed to extend the enrollment period to 16 months in order to maximize enrollment. Altogether, 2,282 families enrolled in the study after extending the enrollment period.

Recruiting 12 communities in which it was feasible to implement the study proved to be a lengthy and difficult process. During the initial study design, the study team developed five site-selection criteria. These preliminary site selection criteria are—

1. The four interventions had to be operational in the community or it had to be feasible to develop the interventions.
2. A sufficient number of homeless families had to seek assistance from the emergency shelters and remain in shelter for at least 7 days, such that it would be possible to enroll 200 to 250 families in about 1 year.
3. Communities had to have a mechanism to identify families who entered emergency shelter and remained for 7 or more days.
4. The homeless assistance community, including CoC decisionmakers, other key stakeholders, and homeless assistance and PHAs had to be willing to participate in the study and to comply with random assignment as the method for determining which assistance families would receive after the shelter stay.
5. The geography of the site had to be such that it was feasible to conduct participant intake, baseline data collection, and random assignment efficiently.

The objective of site selection was to obtain a set of 12 communities in which it appeared feasible to conduct the study and that, taken together, provided a reasonable cross section of the range of characteristics in which homeless service systems operated.¹⁰ Although the sites were not a nationally representative sample of communities, the 12 communities selected to participate provided a good deal of variation in housing market conditions, population, and labor markets characteristics. Gubits et al. (2015) provides information about the characteristics of the sites.

Achieving the established enrollment targets meant that the study had to be conducted in the largest CoCs in the country. Using data from Housing Inventory Count Reports about the number

⁹ The initial specifications for the study's sample size (2,400) and number of sites (12) were included in the request for proposals for the Family Options Study, published in May 2008. During the study design phase, HUD and the study team considered increases to the sample size (to a total of 3,000) as design options were reviewed and modified. In 2011, the final sample size was reduced to 2,550.

¹⁰ For the most part, the study defined a site as an entire local homeless assistance system. Most sites covered a single metropolitan area or urban county that encompassed one or more CoCs and metropolitan areas. The exception was the Connecticut site that included multiple CoCs in the state covering the Bridgeport and New Haven regions, as well as other smaller metropolitan areas.

of emergency shelter units for families and information about typical lengths of stay in emergency shelter from AHAR, the study team estimated that, to enroll 200 families within 1 year, a CoC would need at least 295 families to enter emergency shelter during the course of a year. The team identified 60 CoCs that appeared to meet this threshold (HUD, 2013). Extensive conversations with stakeholders in these communities reduced the number of potential communities to 45 that were targeted for more intensive recruitment efforts in early 2009.

Some communities that had sufficient numbers of families entering emergency shelter were not good candidates for the study for other reasons. For example, some communities with large numbers of families entering shelter, such as New York City, operated service delivery systems that did not align with the study design. In New York City, emergency shelters operated as transitional housing programs and would not have allowed for a test of transitional housing that was intended in the design. Other communities were phasing out emergency shelter in favor of a diversion model with direct placement in transitional housing. Still others did not operate publicly funded transitional housing, and alternative assistance models did not comport with the definition of transitional housing established for the study. Some large CoCs operated decentralized, dispersed systems that would have proven difficult to coordinate study enrollment and referrals. The team found it challenging to locate communities in which all the necessary components were present or could be developed. The team conducted more extensive data collection and recruitment with the 45 communities, reducing the number of potential sites further to 19 that were targeted for final recruitment. The team conducted visits to each of these communities and ultimately selected 10 sites in which to begin enrollment in fall 2010. External challenges, including effects of the severe economic recession at the time that site recruitment took place in 2009 and 2010, and the quick startup of HPRP in 2009 made it difficult for some communities to agree to participate. Two final sites were secured in 2011. The biggest lesson from site recruitment was the need for flexibility, as well as the need for multiple visits and conversations with a large number of stakeholders.

During site recruitment, the study team spoke with the CoC and local homeless system leaders to collect information about the number of families experiencing homelessness and the types of homeless assistance programs that were operating. By definition, all sites were assumed to have usual care. The study team initially sought to select sites that had all three of the other defined interventions (long-term subsidy, short-term subsidy, and project-based transitional housing) available. In late 2009, when it became clear that it would not be possible to secure the target number of sites and enrollment unless this requirement was relaxed, the study team and HUD agreed to include some sites in which only two of the other defined interventions were available. In the end, three sites did not offer all four interventions. Atlanta and Baltimore did not offer the long-term subsidy, and Boston did not offer project-based transitional housing. This compromise was necessary to ensure that an adequate sample of families could be enrolled, and the team adjusted the random assignment process to allow for fewer than four randomization options, while preserving the integrity of each pairwise comparison (see the section titled *Implementing Random Assignment*).

The study team met with staff who operated emergency shelters, transitional housing programs, and rapid re-housing programs to collect information about the structure of programs, type of housing offered, duration and depth of rent subsidies offered, eligibility requirements, services offered, and other features of program operations. The team used this information to identify

programs that conformed to the intervention definitions established for the study. The team also met with local PHAs to secure agreements for voucher set-asides. HUD officials were instrumental in negotiations with the PHAs and also secured administrative funding for vouchers that PHAs issued to families in the study.

The study team selected programs based on an independent assessment of the nature of the housing and services offered, rather than on programs' self-descriptions. The challenge in this endeavor was that shorthand terms used by practitioners and researchers, such as transitional housing or supportive housing, do not necessarily reflect uniform approaches. In reality, as Rog and Randolph (2002) noted, even when programs of a particular "type" are specifically chosen for study, their characteristics can overlap considerably with other programs that nominally use an approach labeled in a different way. Therefore, during initial site selection, the team visited potential study programs (and interviewed some by phone), collected data on their operations, and completed an assessment for each candidate program. This process was intended to ensure that programs conformed to the intervention definition and would provide consistency in program features across sites. The process the study team used to assess and categorize programs is similar to analyzing fidelity to a model, a practice commonly done when studying a demonstration program to ensure that a program is implemented as intended according to a specified model. The objective for the Family Options Study was to ensure that families who enrolled in the study would receive comparable levels of housing assistance and service support within an intervention regardless of site differences and that the rental assistance and services received would differ according to the intended contrasts. Given the number of programs and sites, some variation exists in implementation practices among the final set of 148 programs selected for the study. Gubits et al. (2015, 2013) described the assistance offered by programs in each site for each intervention. Although the study found some program-to-program variation, most notably in case management ratios, overall, the study team concluded that participating programs matched the definitions of the interventions and that the programs representing the interventions were distinct from each another in the ways intended in the study's design to allow for a test of long-term rent subsidies compared with short-term subsidies and the incremental effects of services.

Emergency shelters were the typical entry point for families in the homeless assistance system, and the emergency shelter was also the place where the Family Options Study recruited study participants. In each site, nearly all emergency shelters that served as the primary entry points to the homeless assistance system participated in the study. The study team developed agreements about the expected number of families who would enroll, approximate timeframe for enrollment, and expectations for all participating emergency shelters, transitional housing providers, rapid re-housing programs, and PHAs. The homeless assistance program providers in selected communities had to be willing commit program slots to families in the study and to comply with random assignment as the method of determining which families would be referred to their programs from participating emergency shelters. The study team codified these expectations in a site-specific memorandum of understanding and provided a modest stipend, up to \$20,000 (and contingent on meeting enrollment projections), to help offset the administrative burden of participation for the CoC and service providers.

Exhibit 1 shows the number of providers of each type of program that agreed to participate in the study at each site.

Exhibit 1**Study Sites—Number of Programs by Site and Intervention**

Site	CBRR	PBTH	SUB	UC
Alameda County	1	7	3	9
Atlanta	4	7	NA	4
Baltimore	2	5	NA	3
Boston	2	NA	1	8
Connecticut	2	3	3	10
Denver	1	3	2	5
Honolulu	6	7	2	6
Kansas City	5	3	1	3
Louisville	1	4	1	3
Minneapolis	1	2	1	1
Phoenix	1	4	2	4
Salt Lake City	1	1	2	1
Total	27	46	18	57

CBRR = priority access to community-based rapid re-housing. NA = not available at this site. PBTH = priority access to project-based transitional housing. SUB = priority access to permanent housing subsidy. UC = usual care.

Source: Family Options Study site recruitment data and program data

Ethical Considerations

The Family Options Study offers lessons for addressing ethical considerations when studying a highly vulnerable population staying in emergency shelter. Because observational studies do not attempt to alter which families receive different types of assistance, they typically do not raise ethical issues beyond voluntary participation and privacy and confidentiality of any data that are collected. Access to assistance in an observational study would follow customary practices—first come, first served, or case manager judgment about which families should receive which type of assistance. By contrast, an experimental study design often raises questions about the ethics regarding referrals to services in ways that might deviate from the best judgment of providers, and about assigning families to a usual care group that receives no special referral to any type of program.

To maintain the contrasts in program offers produced by random assignment, the study team attempted to obtain a good faith effort of emergency shelters and service providers to abide by the random assignment process for assigning families to assistance after the shelter stay. The study team attempted to obtain the shelter's agreement not to refer participants to, or provide them with, assistance that was inconsistent with their randomly assigned group. The study team also asked that emergency shelter staff not send families assigned to usual care to one of the tested active interventions. Some staff may not have abided by this request in all cases, and as reported in Gubits et al. (2016, 2015) families assigned to the usual care group used a variety of programs similar to those tested in the study.

The study also took several steps to mitigate ethical concerns raised by the random assignment design. First, enrollment in the study was voluntary, and the study team communicated clearly the voluntary nature of participation to all potential participants. All families were enrolled in the study from emergency shelter and all families were free to remain in shelter regardless of the result of random assignment. Thus, families assigned to usual care were not denied access to emergency shelter or any other programs and services they could access on their own without special offers

of assistance. Second, if families were already on waiting lists for other types of assistance when they entered emergency shelter, they were free to remain on those waiting lists and to accept any assistance that might be offered should it become available, regardless of their study assignment. Third, although families were encouraged to enroll in the program to which they were given priority access, they were not required to do so and were free to take up whatever type of assistance they might locate on their own. Fourth, the study did not impose embargoes on nonparticipating providers and did not ask participating providers to turn away families who found assistance on their own, even if the provider's services would be inconsistent with the participant's randomly assigned group. The study found that during the 3-year followup period, although families used a range of assistance, including assistance in conflict with their random assignment, program usage patterns were strongly influenced by random assignment.

Importantly, the study did not reduce the total number of families receiving homeless and housing assistance in a community. In fact, by offering access to long-term rent subsidies that would not typically have been available to families exiting shelter unless already on waiting lists, the study increased the availability of this type of assistance and enriched the set of programs available to the community as a whole.

The study team also addressed ethical considerations in designing intake and random assignment. The study procedures, including study descriptions, informed consent forms, and data collection instruments were reviewed by institutional review boards at Abt Associates and Vanderbilt University to ensure proper human subjects protections were in place. Prior to enrollment, the study team explained random assignment and the risks and requirements of study participation to potential volunteers. Altogether, a small number of families (13) chose not to enroll in the study.

Family Eligibility for Available Assistance

Program information gathered during site recruitment revealed that homeless assistance programs often targeted assistance to families with particular characteristics. The study team also learned that programs with different services models select the families they believe will benefit from those models. Programs in general were not willing to change eligibility requirements or screening in order to participate in the study. This discrepancy between family characteristics and program's eligibility requirements created a challenge for implementing the random assignment design, because not all families who stayed 7 or more days in emergency shelter would be accepted by the programs to which they might be referred after random assignment. For example, some programs imposed minimum income requirements and others required families to demonstrate sobriety, and others would accept only families with certain minimum incomes or who agreed to participate in mandatory services, or who met citizenship requirements. Still others required that families pass health tests such as tuberculosis testing or bed bug screening. The original plan was to randomly assign all families who consented to participate to one of the three active interventions or to usual care, so that all families would have a chance of assignment to the any one of the four groups. The study team was also concerned about the ethical implications that would arise from randomizing and referring families to programs that would not accept them. However, if families were assigned to programs that would not accept them (or to programs that did not have availability), it would

compromise the experiment and its capacity to detect relative effects of the interventions. To address this challenge, the study team developed pre-random-assignment screening procedures.¹¹

We collected each program's eligibility requirements and developed approximately 100 eligibility screening questions across all participating programs.¹² After informed consent but before random assignment, the study team administered the eligibility screening questions pertaining to programs that had openings, using automated procedures in the study's secure enrollment algorithm. The screener questions improved the likelihood that families would be eligible for the assigned intervention. An example of the type of question asked related to sobriety is—

Some programs will only accept families in which the head of household is clean and sober and who can demonstrate at least 30 days of sobriety. Would you like to be considered for programs with this requirement?

The pre-random-assignment screening relied on respondents' responses to questions about whether they wanted to be considered for programs with the designated requirements. The study team encouraged families to respond honestly to maximize the chances of being able to use the assistance that would be offered but did not attempt to verify responses. The study's informed consent contained this language to explain the purpose of the screening and to encourage candid responses.

Of course, you do not have to take any offer that you do not want. You will need to go through the normal application process at that program. The staff at the shelter and the housing program we offer you can help you with that application process. You should know that it is also possible that the housing program that we offer you will not accept you. You can help to reduce that possibility by answering all the questions honestly, so that the computer only looks for housing for which you are eligible.

After random assignment and referral to a program, families were required to complete the program's regular eligibility determination process, including, in some cases, criminal background checks, drug testing, and income verification. Some families were determined ineligible for a program after random assignment even after passing the prescreening conducted before random assignment.

The analysis plan adopted compensated for the fact that all families did not have all interventions available to them. All analyses were conducted between a pair of interventions, for example long-term subsidies versus usual care, and only families who were eligible for both interventions in a pairwise comparison and were randomized to one of them were included in the comparison. Hence, each comparison is as an experiment between two well-matched groups that differ only in the intervention to which they were assigned.¹³

¹¹ Families were not required to use the program to which the study gave them priority access. They were free to use the offered assistance or to make other arrangements. The study examines the programs that the families use and families' outcomes when offered different types of programs. It was important, however, to maximize the likelihood that families would be able to take up the offered assistance if they chose to do so; otherwise, the study would not provide a strong test of the offered assistance.

¹² See Gubits et al. (2013) for details about the eligibility questions.

¹³ Gubits et al. (2013) analyzed the baseline characteristics of the samples in the pairwise comparisons and verified the baseline equivalence of the groups.

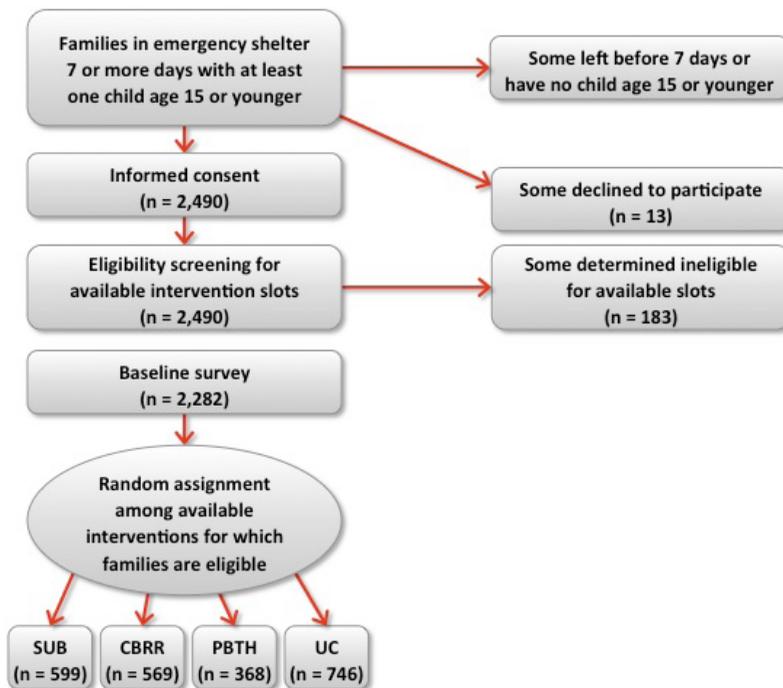
In addition to maximizing the likelihood that families would be able to use their assigned assistance, the results of pre-random-assignment eligibility screening produced important evidence about the match between the families in shelter and the assistance available in the homeless system in the participating sites. Shinn et al. (2017) explore this mismatch in detail. The study found that both availability of interventions and family eligibility were most constrained for project-based transitional housing programs. The short-term rent subsidies provided by rapid re-housing programs were more available than long-term subsidies but had slightly more restrictive eligibility requirements. Thus, it was more difficult for families to meet the eligibility requirements of programs that are ordinarily part of the homeless assistance system than for the programs not targeted to families who experience homelessness.

Implementing Random Assignment

The objective of random assignment was to establish groups of families who, at the time of enrollment, differed only in their assignment to different types of programs. The intake and random assignment process is illustrated in exhibit 2. The study defined a family as at least one parent and at least one child age 15 or younger. The reason for restricting families to those with at least one

Exhibit 2

Steps in the Random Assignment Process



CBRR = priority access to community-based rapid re-housing. PBTH = priority access to project-based transitional housing. SUB = priority access to permanent housing subsidy. UC = usual care.

child 15 or younger was, at the outset of the study, when the followup period was expected to be 18 months, to allow for 18 months of followup with at least one focal child who would not be expected to reach age 18 before the 18-month followup period ended. During the longer, 3-year followup, approximately 100 focal children in the sample had reached age 18 by the time of the followup survey data collection. In those cases, parents reported about these older focal children's experiences. Importantly, a pregnant woman without another child in the shelter was not considered a family for the purposes of the study nor was a parent if all children were separated from her at the time of intake.

If two parents were present in the family at baseline, the mother was preferred as the primary respondent and head of household for subsequent tracking, because in most cases children tend to follow the mother. In such cases, the study team attempted to track both parents, but the mother was the primary respondent for followup interviews. Participation in the study was voluntary. Families who met the eligibility criteria were offered the opportunity to be a part of the study. Families who agreed to participate were administered a survey, and then randomly assigned to one of the three active interventions or to usual care.

Enrollment and random assignment was a multistep process (exhibit 2). In most sites, multiple service providers offered the project-based transitional housing, short-term rent subsidies, and long-term rent subsidy programs examined in the study. Each week, a team of site monitors contacted all the emergency shelters and all program providers in each site by phone to determine whether families in shelter were eligible for study enrollment and whether participating programs had slots available to serve families who might be referred by the study. The site monitors recorded information about availability in the study's enrollment tracking data system. The study team developed customized random assignment software that tracked the availability of families in shelter, the availability of slots in programs and interventions, and indicated whether random assignment could be conducted at any time. An intervention was deemed available if at least one slot at one provider of that intervention in the site was available at a given time.

Usual care was always available in all sites, but other interventions were not always available. For example, project-based transitional housing programs were only available when a vacancy existed or was about to become available in one of the participating programs. In some sites, short-term rent subsidies were not always available because of funding limitations in the rapid re-housing programs. PHAs that provided the long-term rent subsidies through turnover in their regular HCV program had only a designated number of vouchers available each month, so at times vouchers were not available. Without weekly monitoring of availability, the study team might have assigned families to interventions for which it would have taken several months for a slot to become open.

After an intervention was determined available, the interviewer asked the family the eligibility screening questions that pertained to the programs available at the time. A family was considered eligible for a particular intervention if the household head's responses to the prescreening questions showed that the family met the eligibility requirements for at least one provider of the intervention that currently had an available slot.

To undergo random assignment, initially a family needed to be eligible for at least two available interventions in addition to usual care. The study team relaxed this requirement about half way through the enrollment period in order to maximize enrollment. After that point, families had to be eligible for at least one intervention in addition to usual care.¹⁴

This approach to random assignment resulted in each family having a *randomization set* defined as the set of interventions to which it was possible for a family to be assigned, considering both the availability of the intervention *and* the assessed eligibility of the family. Each family had one of seven possible randomization sets.

1. {PBTH, SUB, CBRR, UC}.
2. {PBTH, SUB, UC}.
3. {PBTH, CBRR, UC}.
4. {SUB, CBRR, UC}.
5. {PBTH, UC}.
6. {SUB, UC}.
7. {CBRR, UC}.

The randomization set of each family determines the pairwise comparisons in which the family is included. A family is included in the pairwise comparisons of its assigned intervention with the other interventions in its randomization set. For example, families assigned to the PBTH intervention with randomization set {PBTH, SUB, UC} are included in these two pairwise comparisons—PBTH versus UC and SUB versus PBTH.

The composition of the pairwise comparisons also means that the analysis samples (or groups of families representing the interventions) differ for each comparison. Consider for example the SUB versus UC comparison. In the entire study, 746 families were randomly assigned to the usual care group. However, only 540 of those families also had the SUB intervention available to them as a randomization option. Therefore, only those 540 usual care families are included in the SUB versus UC comparison. All 599 families randomly assigned to the SUB group had usual care available to them when they were randomized, so they are all part of the SUB-versus-UC comparison sample. Therefore, the *full* sample would include a total of 1,139 families (540 UC families and 599 SUB families). However, the *analysis* sample includes only those families who responded to the followup surveys. Exhibit 3 shows sample sizes for each of the six pairwise comparisons based on the response to the 37-month followup survey. As shown in the second column, titled SUB versus UC, the 3-year impact analysis sample includes 501 SUB and 395 UC who had the SUB intervention available as a randomization option and who responded to the followup survey.

¹⁴ This change allowed for two-way random assignment and was made to maximize opportunities to enroll families in the study. Altogether, 183 of the screened families were not eligible for any available interventions besides usual care. These families were not enrolled in the study.

Exhibit 3**Sample Sizes in the Six Pairwise Comparisons for the 3-Year Impact Analysis**

Assigned Intervention	SUB Versus UC	CBRR Versus UC	PBTH Versus UC	SUB Versus CBRR	SUB Versus PBTH	CBRR Versus PBTH
SUB	501	—	—	362	215	—
CBRR	—	434	—	290	—	180
PBTH	—	—	293	—	201	184
UC	395	434	259	—	—	—
Total	896	868	552	652	416	364

CBRR = priority access to community-based rapid re-housing. PBTH = priority access to project-based transitional housing. SUB = priority access to permanent housing subsidy. UC = usual care.

Note: Sample sizes are numbers of families who responded to the 37-month followup survey.

Source: Family Options Study 37-month followup survey

Most families did not have all four options available to them at the time of random assignment. Of the 2,282 families enrolled in the study, 264 families had two randomization options, 1,544 families had three randomization options, and 474 had all four randomization options available.

Gubits et al. (2016) provided details about the impact estimation methods, covariates, weighting, adjustment for multiple comparisons, and construction of outcomes variables. The approach provided findings about the relative impacts of the interventions on housing stability, family preservation, adult well-being, child well-being, and self-sufficiency 3 years after random assignment.

The study also examined the costs of the programs offered to families in the study and the total costs incurred by families in each pairwise comparison during the 3-year followup period. Information on the relative costs of the active interventions and usual care is a crucial complement to findings about their relative impacts. To assess the relative costs, the study analyzed the cost per month of each type of program and the overall cumulative cost of the housing and service programs families in each assignment group actually used during the 20- and 37-month study periods. Gubits et al. (2016) provided details about the methods used to collect and analyze intervention costs. The study did not attempt to monetize other costs or benefits, for example, the cost of foster care placements.

Policy Questions Answered by the Study

In the 3 years after random assignment, a substantial number of families did not use the program to which they were given priority access, and some used other programs. The full experimental sample for a given intervention collectively shows how different forms of housing assistance are used when families are given priority access to one particular program type while simultaneously having the freedom to use other forms of assistance available in their communities. Including all the families randomly assigned to the usual care group similarly reveals the range of programs used when no priority access is provided. The kinds of programs that the usual care families accessed would continue to exist in communities, even with federal or local prioritization of one particular intervention or another. Thus, the full-sample comparisons between randomly assigned interventions—known as *intention-to-treat*, or ITT, impact estimates—provide the best guide to

policymakers in a complex world. All this said, evidence of the effects of a particular program type on families who actually use that approach (for example, the effect of short-term rent subsidies on the families who use that assistance compared with equivalent families who do not use the approach would have high value to the homeless assistance field. The study is unable to isolate the effects of a particular program type on those families who actually use the program, compared with equivalent families who do not use the program. Evidence from such local average treatment effect or effects of treatment on the treated (TOT) would be important, not because any federal or local policy action could actually create such a contrast for the population of families who experience homelessness, but because efforts to improve a particular intervention model need to be based on knowledge of what participating in that model actually does for families compared with not participating. The assumptions necessary to calculate TOT effects do not appear to hold true for the study sample. For example, such calculations would need to assume that interventions have the same impact for people that take them up with priority access and people that use them even without priority access. In the Family Options Study, we cannot make that assumption, because priority offers affected not only whether families used an assigned intervention but also how soon and for how long, two factors that could easily influence the intervention's impact.

Conclusion

The Family Options Study used an experimental design in order to provide the strongest possible evidence about the relative effects of alternative policy emphases for families who experience homelessness. Conducting the study as an experiment posed challenges and required flexibility at all phases. The study offers lessons and can inform future experimental research.

First, when designing a study of currently operating programs, researchers need to allow for adequate time to assess the program service landscape and to define key characteristics and points of contrast to be tested, particularly if multiple interventions are to be tested. The study team spent several months working with HUD and collecting information from local homeless assistance stakeholders to define the features of the housing assistance and services to be tested in the study. A significant change in the homeless assistance environment occurred early in the design when HPRP was funded, necessitating a change in the specifications of interventions. Flexibility enabled the study to examine short-term rent subsidies that were implemented on a large scale as the study enrollment got under way.

The Family Options Study required broad participation of a wide range of service providers and homeless assistance leaders in the communities. Communities had to satisfy a number of criteria to meet the requirements of the study. Site recruitment was, by necessity a lengthy, iterative process focused first on identifying communities with adequate sample sizes. Communities with adequate numbers of families entering shelter also had to operate a service delivery system that was compatible with the design in which families would be enrolled in the study after a 7-or-more-day stay in an emergency shelter and then referred to transitional housing, long-term rent subsidies, or short-term rent subsidies provided by rapid re-housing programs. Service providers had to agree to abide by random assignment as the mechanism for assigning families to assistance after the shelter stay

and also were asked to make a good faith effort to avoid referring families to assistance that conflicted with their random assignment. Obtaining the group of 12 sites that ultimately conducted the study required modifications of initial criteria, particularly allowing for sites with fewer than the three active interventions and with lower projected sample sizes.

Limitations in program availability and family eligibility required adaptations to the study design. The study also had to adjust random assignment procedures to include a detailed prescreening prior to random assignment to assess potential eligibility for available programs. This prescreening was essential to ensure that families would be randomized to programs likely to accept them. The study team conducted the analysis using pairwise comparisons that included only families eligible for assignment to both of the interventions in a comparison (and assignment to one of them) to ensure the internal validity of the experiment.

Taken together, the implementation of the Family Options Study demonstrates the advantages of flexibility and modifications to research design and procedures, while maintaining the integrity of the experimental design. The results of this flexibility can yield strong evidence while responding to real world constraints.

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