University of Pennsylvania

From the SelectedWorks of Dennis P. Culhane

October 2011

The Patterns and Costs of Services Use among Homeless Families

Contact Author

Start Your Own SelectedWorks

Notify Me of New Work

Available at: http://works.bepress.com/dennis_culhane/104

The Patterns and Costs of Services Use among Homeless Families[1]

Dennis P. Culhane

University of Pennsylvania

Jung Min Park

University of Illinois at Urbana Champaign

Stephen Metraux

University of the Sciences

Running head: PATTERNS AND COSTS OF FAMILY HOMLESSNESS

Address correspondence to:
Dennis P. Culhane
culhane@upenn.edu

[1] The research reported here was supported by a grant from the Conrad N. Hilton Foundation. The authors gratefully acknowledge the assistance of the City of Philadelphia for providing the necessary data, including Matt Berg and Dainette Mintz of the Office of Supported Housing, Marcella McGuire of the Department of Behavioral Health Services, and Patrick Kutzler of the Department of Human Services.

Abstract

This study examines families' use of behavioral health hospitalization and foster care placement prior to, during and following shelter use, comparing families based on shelter pattern and type of housing exit. Results show that inpatient and foster care services use drops in the homelessness period, but rebounds following exit, regardless of pattern of shelter use, and type of housing exit. Results suggest that shelters supplant use of services, but not on a sustained basis. Despite declines in concurrent services use, the homelessness period is overall more costly for episodically and long-term shelter users, primarily owing to the high costs of shelter. High rates of inpatient and foster care services use following the homeless spell suggest that providers of homeless assistance should systematically screen and refer homeless families to on-going community-based service supports. Service use patterns indicate that homeless spells may disrupt continuity of care with community-based health and social services.

The Patterns and Costs of Services Use among Homeless Families

Dennis P. Culhane, Jung Min Park & Stephen Metraux

Introduction

Prior research has investigated the sequencing and costs of services use by unaccompanied adults who experience long-term or "chronic" homelessness. Chronic homelessness is associated with increased rates of admission and duration of stays in inpatient health care and correctional facilities relative to controls or to the same persons once placed in supported housing (for a review, see Culhane, Gross, Parker, Poppe & Sykes, 2008). Only one published study has investigated the patterns and costs of services use among homeless families (Spellman, Khadduri, Sokol & Leopold, 2010). This study examines the use and sequencing of inpatient behavioral health and child out-of-home placement among families who experience homelessness, comparing usage before, during and following exit from emergency shelter, and comparing families with temporary, episodic or long shelter stays, and by type of housing placement at exit from shelter.

Literature Review

Research on the patterns of shelter use among homeless families in four jurisdictions has identified three types (Culhane, Metraux, Schretzman & Valente, 2007). A "temporary" shelter user group accounts for 75% of the population and stays relatively briefly (three weeks to three months, depending on the jurisdiction), and exits with a low likelihood of return (within three years). A second group, comprising approximately 5% of the population, has an "episodic" pattern of shelter use, with repeated, short shelter stays. The final 20% of the population has a single but sustained, long stay in emergency or transitional shelter, with the average stay ranging from six months to 1.6 years, depending on the jurisdiction. Contrary to parallel analyses among

unaccompanied adults, long shelter stays are *not* associated with a more significant history of intensive behavioral health services use, nor do families with long shelter stays have a differential rate of placement of children in foster care, relative to the temporary shelter users (see also Weinreb, Rog & Henderson, 2010). Indeed, on some measures and in some jurisdictions, the longest-staying households appear to have higher functioning, as measured by rates of foster care placement of children, disability and income from work (although longer staying families have a longer observation period for achieving employment). In contrast, the "episodic" shelter users have consistently and significantly greater rates of inpatient mental health and substance abuse treatment histories, and higher rates of foster care placement of children.

These findings led the authors to conclude that shelter programs and policies, as well as the choices of heads of household, may result in selection effects in patterns of shelter use. In particular, the authors concluded that households with fewer barriers to stability may be differentially recruited to shelter programs designed to have longer stays through engagement in self-sufficiency programs, and/or that families with more barriers and service needs are differentially selected out of such programs, either by choosing to exit prior to recruitment or through eviction. Further, long stays could reflect the "graduation" expectation of some service-enriched shelter or transitional housing programs, wherein families with fewer barriers and service needs are able to sustain and complete a prescribed program regimen. Some combination of these factors is expected to account for the paradox that the families who have the longest periods of homelessness, as measured by shelter use, do not appear to have differential barriers to exit.

Long shelter stays are most commonly associated with “transitional housing” programs, a type of shelter that is typically more service-enriched, with child care and family support services often provided on-site, and which usually have more private accommodations for families, including apartment-style units. Some programs may also have behavioral health programs as well. The long stays associated with these programs are costly. The study cited above found that the relatively fewer households (20%) who had long shelter stays used 50% of the total system days (thus, resources). In two of the jurisdictions studied (Massachusetts and New York City), the average cost of these long stays was approximately $50,000 per family. Given that half of the homeless system resources were being used by this relatively small group that did not have distinctive service needs, the findings raise questions about the equity of resource allocation within the homelessness assistance system, the efficiency of these programs, and their effectiveness, including whether long stays are differentially associated with improved outcomes among families that would warrant this level of public investment.

Unfortunately, the limited literature on transitional housing does not provide much in the way of evaluative evidence. Research on housing stability among families exiting emergency or transitional housing and following placement in subsidized housing has found that housing stability rates are so universally high (92%) among families with subsidies, that there are no detectable differences in housing stability outcomes with respect to the duration of shelter stay (a proxy for amount of services received) or family characteristics (Wong et al. 1997, Shinn et al., 1998). An ethnographic study has also criticized the disruption of community ties and the artificial dependencies created by transitional housing programs (Gerstel et al., 1996). Housing stability outcomes have also not been found to differ when they are accompanied by post-housing placement case management services (Weitzman & Berry, 1994). In contrast, Bassuk

and Geller (2006) argue that such services are key supplements to housing vouchers in facilitating housing stability and other measures of family stability. Proponents of transitional housing have also argued that transitional housing is a successful pathway out of poverty and should be greatly expanded as a more regular route to self-sufficiency among all or nearly all poor families (Nunez, 1994, 2004).

Any conclusions about the value of transitional housing or long shelter stays in general will have to weigh both the benefits of the programs and their relative costs, and in comparison to alternatives. The issue of the costs associated with homelessness has been an important factor in policymaking related to chronic homelessness among unaccompanied adults. The services use and costs associated with adults who experience chronic homelessness has identified significantly higher rates of admission to and duration of stays in inpatient health and correctional facilities during homelessness episodes relative to controls or to the same persons once housed (for a review, see Culhane et al., 2008). Among adults who are chronically homeless, most of the high cost services use is attributable to behavioral health care, especially inpatient psychiatric treatment. Some studies have found that reductions in services use (especially hospitalization) following supported housing placement offset some or all of the costs of the housing intervention, depending on the population targeted.

Similar research regarding the impact of homelessness on services use and costs among homeless families has been limited to a single study (Spellman et al., 2010). Similar to results among single adults, Spellman et al.'s study in four jurisdictions (pre, during and post-homelessness) found that homelessness was associated with increased costs in health and mental health services during the homelessness episode, whereas criminal justice system costs increased only in the post-homelessness period (except in one jurisdiction, where it remained flat). (The

authors did not report costs associated with foster care placement relative to the timing of the homelessness episode.) The authors also reported that the high costs of emergency and transitional shelter relative to conventional housing made the homelessness period much more expensive compared to either the pre or post homelessness periods, regardless of the site, but especially for the episodically and longer-term homeless. Moreover, the cost of shelter was a more important cost factor than the increased use of acute care services, unlike what has been reported for homelessness periods among unaccompanied adults. The following study attempts to reexamine this issue in a large urban jurisdiction, including shelter, behavioral health, and foster care costs, comparing pre, during and post-homelessness periods, and comparing those who exit to subsidized housing and those who do not.

Research Questions

This study investigates the pattern of behavioral health inpatient and out-of-home placement services use among homeless families before, during and following shelter use, comparing families by their pattern of shelter use (temporary, episodic and long-term), and by type of housing exit (to subsidized versus nonsubsidized housing). The research questions are:

1) Do families have higher rates of behavioral health hospitalization and out-of-home placement of children during their homelessness spells, as compared to before or after?
2) Do the patterns or sequencing of behavioral health hospitalizations and out-of-home placements vary by type of shelter use pattern? In particular, are long shelter stays associated with a reduction in subsequent hospitalizations or placement of children in foster care?
3) Is an exit to subsidized housing associated with a reduction in hospitalizations or out of home placements, as compared to households that exit to housing without a subsidy?

4) Finally, what are the costs associated with the shelter, behavioral health and child welfare services use by homeless families before, during and after homelessness, and how do those vary by the pattern of shelter use?

Methods

Data and sample

This study used administrative data on public shelter utilization, Medicaid eligibility and claims files, and child welfare records from the City of Philadelphia. Public shelter records maintained by the Philadelphia Office of Supportive Housing (OSH) provided information about dates of shelter entry and exit, identifiers, and demographics. The OSH database represents approximately 85% of the total emergency and transitional shelter system (Metraux et al., 2001). The OSH data were integrated with other databases to identify publicly funded health and social service uses. Personal identifiers (name, date of birth, gender, social security number) from the public shelter system were matched with similar information from a database on Medicaid files and child welfare records. Families with children that entered publicly funded shelters in Philadelphia for the first time between 1999 and 2000 were selected for inclusion in the study. Shelter utilization was tracked for three years since the first episode of shelter entry. Families with previous shelter admission records were excluded. The sample included a total of 1,564 families.

Medicaid records were extracted for persons who received behavioral health treatment from 1996 to 2003 in order to ensure three years of observation before and after the first homeless episode. Medicaid eligibility files provided information on program eligibility and demographic characteristics, and Medicaid claims files included information on dates and types of service, corresponding diagnoses, and costs for services. A record of inpatient and outpatient

care for mental disorders and substance use disorder, defined as International Classification of Diseases-9 codes from 290 to 319, were identified as behavioral health services.

Department of Human Services data contain records on child protective and foster care services. For this study, foster care records from 1996 through 2003 on 38,867 individuals were included.

No study participant was directly contacted for this study. The research was approved by the University of Pennsylvania's and the University of Illinois' institutional review boards.

Analysis

Homeless families were classified based on pattern of shelter use according to criteria developed from a previously published study (ref): the temporary, episodic, and long stay groups. For each group of homeless families, their residential instability period (RIP) was calculated based on their homeless shelter history to define the observation periods for services use. For all observations with just one stay and for those who have a single stay based on a 90-day exit criterion (stays separated by less than 90 days are treated as a continuous episode), the RIP is between the first day they entered shelter and the last day they exited shelter in the 3-year risk period. This method of calculation was applied to approximately 80% of all observations in this dataset, including the majority of the temporary and long stay groups. An additional 20% of all observations had two or more shelter stays. For the group of families with a single stay followed by at least 365 days of being out of shelter (approximately 10%), the RIP was between the first entry day and the last exit day for the lengthiest episode. For the families who had multiple stays spaced 90 to 365 days apart (approximately 10%), the RIP was between the time between their first entry and their last exit.

Average service utilization rates were constructed by type of service. Then, the rates were compared for before, during, and after RIP for each cluster of homeless families. Actual service costs for inpatient behavioral health care were calculated by summing all amounts reimbursed by Medicaid during each observation period divided by the number of families in each cluster. Actual costs for foster care were based on the average payment rates for different foster care service types, which were provided by the Department of Human Services. These data reflect the group average rather than the service user average.

Families placed in permanent subsidized housing were compared to families who exited without a subsidized housing placement on the behavioral health and foster care outcomes.

Results

Inpatient behavioral health service use before, during, after the residential instability period

Overall, 13.5% of the heads of homeless families has a history of inpatient psychiatric treatment. The rate is 29.2% in the episodic group, compared to 13.4% in the temporary group and 7.4% in the long-term group.

Figure 1 displays the rates of inpatient care use differ across the three subgroups for each time period of before, during, and after the residential instability period. For all three subgroups of homeless families, the proportion of inpatient service users considerably decreased during the residential instability period even in the long-term group, which had a lengthy RIP. Overall test statistics shows significant differences across three subgroups for each period. The pairwise comparison tests were also conducted to locate the differences between groups. Before RIP, a significant difference was observed for the episodic vs. long-stay groups. During RIP, a significant difference was observed for episodic vs. long-stay groups and episodic vs. temporary groups. After RIP, the differences between all three subgroups were significant.

Among homeless families in the temporary group, 7.7% had a history of inpatient care before RIP. The rate dropped to 1.2% during RIP and then bounced to 9.6% after RIP. Differences among the three rates were statistically significant ($p<.001$). According to pairwise comparisons, the differences between Before RIP vs. During RIP and During RIP vs. After RIP were significant at the .05 level.

In the episodic group, 12.3% had a history of inpatient care before RIP. The rates of inpatient service use in the group were 7.7% during RIP and 19.2% after RIP. The three rates for different observation periods were statistically significant ($p<.05$). Pairwise comparisons showed that only the difference between During RIP vs. After RIP was significant at the .05 level.

In the long-stay group, 4.3% had a history of inpatient care before the RIP, compared to 1.9% during the RIP and 2.8% after the RIP. There are no statistically significant differences among the rates.

Insert Figure 1 about here

Foster care involvement before, during, after residential instability period

Figure 2 displays that among the heads of homeless families in the episodic group, 6.2% received child welfare services before RIP. The rate was 6.2% during RIP and 7.8% after RIP. Pairwise comparisons show that the differences between each pair of Before RIP vs. After RIP and During RIP vs. After RIP were significant at the .01 level.

In the temporary group, 4.4% were involved with the child welfare system. The rate dropped to 0.6% during RIP and then rose to 7.2% after RIP. Each pair of Before RIP vs. During RIP, During RIP vs. After RIP, and Before RIP vs. After RIP was significant at the .001 level.

In the long-stay group, 7.4% received child welfare services, compared to 3.1% during RIP and 5.0% after RIP. According to pairwise comparisons, the differences between Before RIP vs. After RIP and During RIP vs. After RIP were significant at the .001 level.

Insert Figure 2 about here

Rates of inpatient behavioral health services use and foster care involvement by type of housing exit

Approximately 10% of homeless families in the sample were discharged to permanent housing. As shown in Table 1, 6.8% of families discharged to permanent housing received inpatient behavioral health services in the post RIP, compared to 11.0% among those discharged to non-subsidized housing. The difference, however, was not statistically significant. In the case of both discharge to permanent housing and to other arrangements, rates of inpatient behavioral health services use and foster care entry increase significantly after discharge (Post RIP). Rates of services use Post RIP also increase over pre-RIP rates for both exit types, but are only statistically significantly higher among those discharged to other, nonsubsidized housing placements.

Insert Table 1 about here

Costs of shelter use and inpatient behavioral health services before, during, after the residential instability period

Table 2 shows the average expenditures per individual by type of service between 1997-2003. These data reflect the group average rather than the service user average.

Costs for inpatient mental health and substance use related care were incurred primarily in the pre and post RIP and declined in the during RIP across groups, with the exception of children who were episodically sheltered, whose inpatient costs increased from the pre to the RIP and again in the post-RIP period. Foster care costs where highest in the post-RIP across shelter stay pattern, and increased during the RIP for the episodically sheltered group. As expected, most of the public shelter service expenditures were incurred during the RIP, across the clusters of homeless families, whereas only a few families returned to shelter following the index RIP. Overall, and across shelter stay pattern, the majority of the costs were incurred for shelter services, followed by foster care. The highest average costs for shelter occurred among the long-stay group during the RIP ($30,280), as expected, and the highest cost for foster care occurred among the episodic group in the post-RIP ($6,134).

Insert Table 2 about here

Discussion

Contrary to published research on chronic homelessness among single adults, current homelessness among families is not associated with a significant increase in the use of inpatient behavioral health services, nor is current homelessness among families associated with an increase in child welfare placement services. Indeed, shelter use among homeless families appears to supplant use of mainstream services, almost regardless of the pattern of shelter use. The lone exception is rates of foster care placement among episodically homeless families,

which remains even from before and during the residential instability period; but such families are also intermittently engaged in shelter. Whether or not families actually receive compensatory services in shelters, and whether or not such services are better, worse or comparable to those provided in the community, remain questions to be pursued in future research.

However, whatever advantages may have been attained from shelter use and shelter-based services, the use of shelter does not reduce future need for intensive service supports, as rates of inpatient behavioral health care and foster care placement of children increase following shelter placement, regardless of the pattern of shelter usage. Even families who received the highest "dose" of shelter and shelter-based services (long-stay families) show statistically significant increases in post-shelter hospitalizations and placement of children in foster care.

Permanent subsidized housing placement is associated with less of an increase in post RIP services use relative to other placements, but rates of services use increase regardless of the type of discharge. Thus, while families likely benefit significantly from subsidized housing, subsidized housing placement does not reduce the subsequent need for intensive services use, suggesting that formerly homeless families have significant service needs that are not ameliorated by resolution of their homelessness alone. Correspondingly -- and contrary to comparable research among adults who are chronically homeless and placed in supported housing -- costs associated with mainstream services use does not decline following housing placement, indicating that the cost-offset arguments often used to promote supportive housing for people who are chronically homeless do not hold true in the case of homeless families who are housed. An important difference is that adults who are chronically homeless typically receive on-site supportive services as part of their housing placement, whereas families in long-term shelter placements receive on-site supportive services as part of their shelter stay. Were

preventive supportive services provided to families (or to families who screened positive for them) as part of their housing placement, this may reduce families' need for the more intensive (and expensive) inpatient behavioral health and child welfare placement services post-exit from shelter. This area deserves future study.

Although rates of mainstream services use do not increase in the homelessness period among families (in fact, they almost always decline), the cost data demonstrate that the index residential instability period is significantly more expensive than the post RIP period for the families with long-term shelter stays. Given their long stays, this group has particularly high shelter costs. The episodic shelter users also have significantly high shelter costs, which continue somewhat in the post-index period, as their instability leads them to continue to turn to shelter, as well as to make increased use of child welfare placement services.

From a policy perspective, these results suggest that it remains unclear what benefits are derived from long shelter stays. While rates of acute care services use go down during the shelter stay, these reductions in demand are not sustained after families exit, and the pattern is not any different for families who stay in shelter for brief or long periods of time. Furthermore, for families, emergency and transitional shelters are usually equally or more expensive than permanent supportive housing because family shelters typically offer 24-hour access and private units with services provided on-site (HUD, 2010). This suggests that further consideration should be given to the benefit of long shelter stays, particularly given the high costs associated with family shelter stays.

Regardless of the type of shelter stay pattern, some families in each group are clearly in need of continued services after their homelessness spell, as illustrated by the relatively high rates of foster care placement and inpatient behavioral health care. These service demands

suggest that homeless families should be more carefully and systematically screened for behavioral health and child welfare risks as part of their homelessness services engagement, and that families identified as at-risk should receive community-based services to try to prevent unnecessary hospitalizations and to avert placement of children in foster care, particularly following their departure from the shelter system. That some of these families are known to these intensive service and treatment programs prior to their homelessness spells also suggests that agencies responsible for these services should be attending to the housing problems of these families, and assisting them in avoiding homelessness in the first place.

This study has several limitations. While the Medicaid claims provide information on diagnosis and behavioral health services, the analysis did not include any direct measure of mental health conditions nor health services not reimbursed by Medicaid. In addition, no data on school absenteeism, or the transportation costs for homeless children were included, so this is an incomplete picture of the costs associated with family homelessness. This study also did not include costs associated with the criminal justice system, which has been commonly investigated among homeless adults. The results are also restricted to one city, which has unknown generalizability to other US cities.

References

Bassuk, E & Geller S (2006). The role of housing and services in ending family homelessness. *Housing Policy Debate, 17*: 781-806.

Culhane, DP, Gross, KS, Parker, WD, Popper, B & Sykes, E (2008). "Accountability, Cost-Effectiveness and Program Performance: Progress since 1998." *National Symposium on Homelessness Research*. Washington: US Department of Housing and Urban Development and US Department of Health and Human Services.

Culhane, D. P., Metraux, S., Park, J. M., Schretzman, M., & Valente, J. (2007). "Testing a Typology of Family Homelessness Based on Patterns of Public Shelter Utilization in Four U.S. Jurisdictions: Implications for Policy and Program Planning." *Housing Policy Debate, 18,* 1–28.

Gerstel, N, Borgard, CJ, McConnell, J & Schwartz, M (1996). The therapeutic incarceration of homeless families: *Social Service Review*, *70* (4): 543-572.

Nunez, R. (1994). *Hopes, dreams & promise: The future of homeless children in America*. New York: Homes for the Homeless.

Nunez, R. (2004). *A Shelter is Not a Home…. Or Is It?* New York: Institute for Children, Poverty & Homelessness.

Shinn, M. Weitzman, B., Stojanovic, D., Knickman, J.R., Jimenez, L. & Duchon, L. (1998). Predictors of homelessness among families in New York City: From shelter request to housing stability, *American Journal of Public Health, 88,* 651–1657.

Spellman, B, Khadduri, J, Sokol, B & Leopold, J (2010). *Costs Associated with First-time Homelessness for Families and Individuals*. Washington: US Department of Housing and Urban Development.

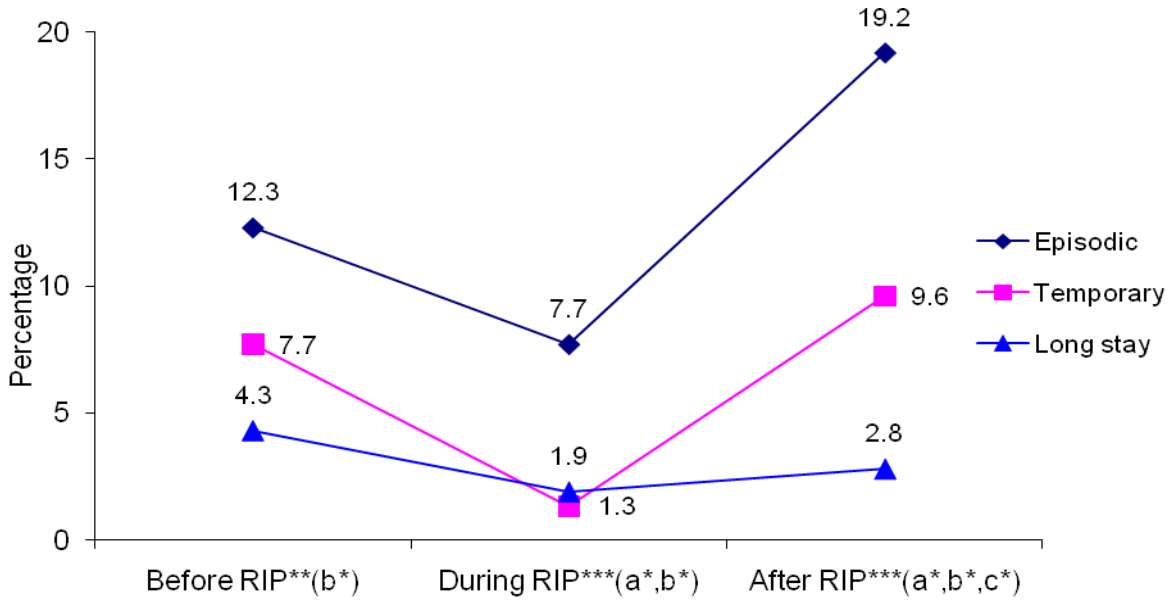
U. S. Department of Housing and Urban Development. (2010). *The 2009 annual homeless assessment report to Congress.* Washington, DC. Available at: http://www.huduser.org/portal/publications/povsoc/ahar_5.html.

Weinreb, L., Rog, DJ & Henderson, KA (2010). Exiting shelter: An epidemiological analysis of barriers and facilitators for families. *Social Service Review*, *84* (4), 597-614.

Weitzman, B. C., & Berry, C. (1994). *Formerly Homeless Families and the Transition to Permanent Housing: High-Risk Families and the Role of Intensive Case Management Services. Final Report to the Edna McConnell Clark Foundation.* New York: New York University, Robert F. Wagner Graduate School of Public Service, Health Research Program.

Wong, Y. L. I., Culhane, D. P., & Kuhn, R (1997). Predictors of Exit and Re-entry among Family Shelter Users in New York City. *Social Service Review*, *71*, 441-62.

Figure 1 Rates of inpatient behavioral health service use before, during, after RIP by clusters



Pairwise comparisons:
a=temporary vs. episodic; b=episodic vs. long-stay; c=temporary vs. long-stay
* $p<.05$, ** $p<.01$, *** $p<.001$.

Figure 2 Rates of foster care involvement before, during, after RIP by clusters

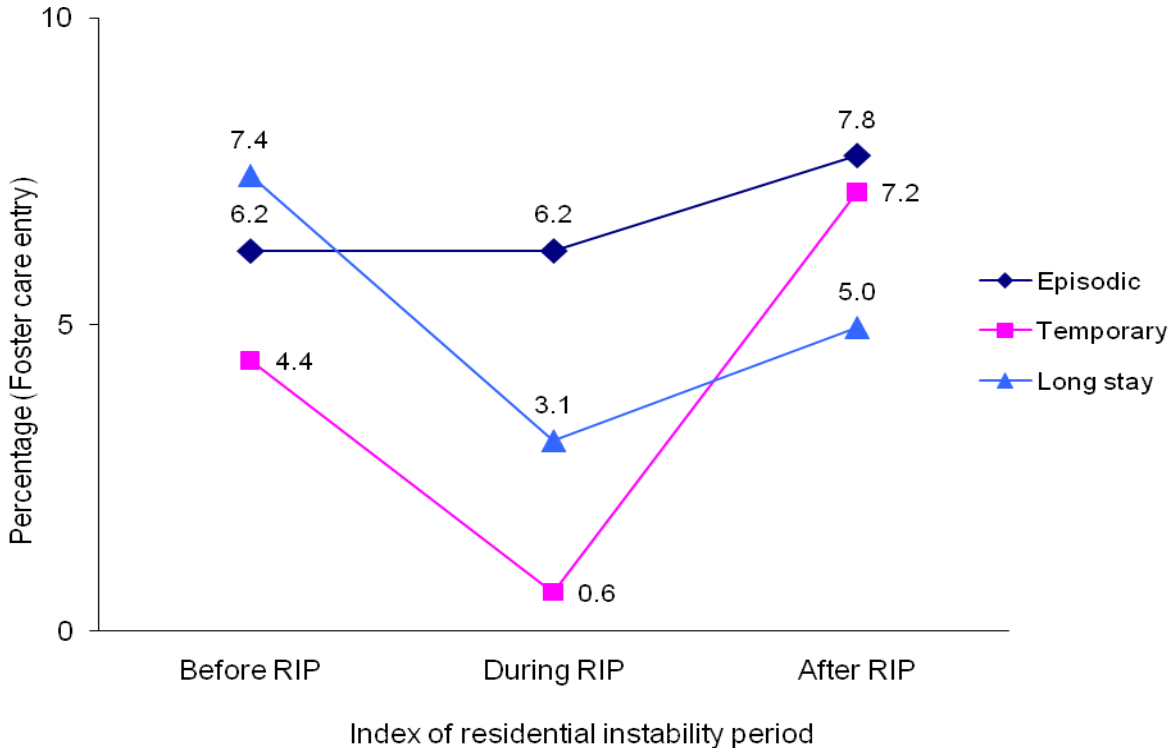


Table 1. Rates of service use by type of discharge

	Inpatient behavioral health care			Foster care entry		
	Pre RIP	During RIP	Post RIP	Pre RIP	During RIP	Post RIP
Permanent Housing (n=148)	4.7	2.0	6.8[b*]	6.1	4.1	7.4[b*]
Other (Non-subsidized) (n=1,256)	8.6	2.2	11.0[a*,b***]	4.0	2.7	10.1[a***,b***]

Paired-comparisons:
"a" indicates a statistically significant difference between Pre RIP and Post RIP;
"b" indicates a statistically significant difference between During RIP and Post RIP.
*p<.05, **p<.01, ***p<.001.

Table 2. Actual and standardized cost estimates of inpatient behavioral health care, foster care and public shelter services between 1997-2003

	Temporary group (N=1,112)			**Episodic group (N=129)**			**Long stay group (N=323)**		
	Pre RIP	During RIP	Post RIP	Pre RIP	During RIP	Post RIP	Pre RIP	During RIP	Post RIP
A. Inpatient MH & SA services (for heads of family)	$447	$52	$862	$1,830	$741	$1,587	$230	$22	$180
B. Inpatient MH & SA services (for children in family)	$398	$17	$788	$734	$935	$1,813	$220	$18	$182
C. Foster care	$1,345	$103	$3,856	$931	$1,462	$6,134	$1,074	$1,181	$3,413
D. Shelter services	N.A.	$5,172	$262	N.A.	$13,987	$6,256	N.A.	$30,280	$2,591
Total	$2,190	$5,344	$5,768	$3,495	$17,125	$15,790	$1,524	$31,501	$6,366