Linking Homelessness Vulnerability Assessments to Housing Placements and Outcomes for Youth

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Abstract

Youth homelessness has reached a concerning level of prevalence in the United States. Many communities have attempted to address this problem by creating coordinated community responses, typically referred to as Coordinated Entry Systems (CES). In such systems, agencies within a community pool their housing resources in a centralized system. Youth seeking housing are first assessed for eligibility and vulnerability and then linked to appropriate housing resources. The most widely adopted tool for assessing youth vulnerability is the Transition Age Youth-Vulnerability Index-Service Prioritization Decision Assistance Tool (TAY-VI-SPDAT): Next Step Tool (NST) for homeless youth. To date, no evidence has been amassed to support the value of using this tool or its proposed scoring schematic to prioritize housing resources. Similarly, there is little evidence on the outcomes of youth whose placements are determined by the tool.

Abstract (continued)

This article presents the first comprehensive and rigorous evaluation of the connection between vulnerability scores, housing placements, and stability of housing outcomes using data from the Homeless Management Information System (HMIS) collected between 2015 and 2017 from 16 communities across the United States. The two primary aims are (1) to investigate the degree to which communities are using the tool's recommendations when placing youth into housing programs, and (2) to examine how effectively NST scores distinguish between youth in greater need of formal housing interventions from youth who may be able to self-resolve or return to family successfully. High vulnerability scores at intake were associated with higher odds of continued homelessness without housing intervention, suggesting the tool performs well in predicting youth that need to be prioritized for housing services in the context of limited resources. The majority of low scoring youth appear to return home or self-resolve and remain stably exited from homelessness. Youth placed in permanent supportive housing (PSH) had low recorded returns to homelessness, regardless of their NST score. Youth with vulnerability scores up to 10 who were placed in rapid rehousing (RRH) also had low returns to homelessness, but success was much more variable for higher-scoring youth.

The Voices of Youth Count study found youth homelessness has reached a concerning prevalence level in the United States; one in 30 teens (13 to 17) and one in 10 young adults (18 to 25) experience at least one night of homelessness within a 12-month period, amounting to 4.2 million persons a year (Morton et al., 2018). Many communities have attempted to address this problem by creating coordinated community responses, typically referred to as Coordinated Entry Systems (CES). In such systems, most agencies within a community pool their housing resources in a centralized system called a Continuum of Care (CoC). A CoC is a regional or local planning body that coordinates housing and services funding—primarily from the U.S. Department of Housing and Urban Development (HUD)—for people experiencing homelessness. Youth seeking housing are first assessed for eligibility and vulnerability and then those youth identified as having the greatest need are linked to appropriate housing resources. The most widely adopted tool for assessing youth vulnerability is the Transition Age Youth-Vulnerability Index-Service Prioritization Decision Assistance Tool (TAY-VI-SPDAT): Next Step Tool (NST) for homeless youth, which was developed by OrgCode Consulting, Corporation for Supportive Housing (CSH), Community Solutions, and Eric Rice (Orgcode Consulting, 2015).

This article presents the first comprehensive evaluation of the connection between vulnerability scores, housing placements, and stability of housing outcomes using data from the Homeless Management Information System (HMIS) collected between 2015 and 2017 from 16 communities in the United States. The two primary goals of the article are (1) to understand to what extent communities are using the OrgCode recommendations when placing youth into housing programs, and (2) to understand to what extent NST scores are effectively differentiating those youth who have greater needs for permanent supportive housing (PSH) and rapid rehousing (RRH) interventions from those youth who may successfully self-resolve or return to their family. As these results come from administrative data, we do not perceive this article as a formal test of validity of the NST tool,

nor do we see it as a formal evaluation of the effectiveness of PSH and RRH as housing interventions for youth. Rather, we see this article as a valuable first look into how communities have been using the NST to prioritize housing for youth and how successful or not youth have been in a variety of exits from homelessness in the context of CoCs that have adopted this tool.

Background

In almost all communities in the United States, the number of youth experiencing homelessness exceeds the capacity of the housing resources available to them (Morton et al., 2018). This situation leaves communities with the predicament of trying to decide who to prioritize for the precious few spots available in housing programs. Many cities have attempted to address this problem through the creation of CES. For adults, the use of CES and assessment tools has a longer history (Padgett, Henwood, and Tsemberis, 2016). In the context of adult homelessness, tools for assessing vulnerability have focused on assessing factors that are associated with premature mortality (Hwang et al., 1998; Juneau Economic Development Council, 2009; Swanborough, 2011) or with higher system costs (Economic Roundtable, 2011). Youth under the age of 25, however, are less likely to experience health-related premature mortality and thus potentially less prone to incurring system costs, relative to chronically homeless adults (Winetrobe, et al., 2015). Therefore, new assessment tools have been developed in recent years that reflect the needs and realities of youth who are homeless. The TAY Triage Tool, developed by the CSH and Rice (Rice, 2013), and the NST are the most widely used tools to assist homeless youth (Orgcode Consulting, 2015). Recently, Rice (2018) has provided an extensive description of the development of these two tools and the differences between them (Rice, 2018). Notably, the NST incorporates the six items that make up the TAY Triage Tool as the two tools are not entirely distinct. This article focuses on examining how 16 communities have used the NST for assessing vulnerability and as a guide for housing prioritization.

The NST is a set of 28 multiple-choice, dichotomous, and frequency-type questions to measure a youth's vulnerability based on his/her history of housing and homelessness risks, socialization, daily functions, and wellness. Example questions include: "Is your current lack of stable housing because of violence at home between family members?" and "Have you threatened to, or tried to, harm yourself or anyone in the last year?"

Youth responses to the NST are cumulatively scored from 0 to 17; the higher the score, the higher the assessed vulnerability. For those youth who score 0 to 3, the recommendation is that no moderate or high intensity services be provided at that time. For the youth who score 4 to 7, the recommendation is for time-limited housing supports with moderate intensity. For youth scoring 8 or higher, the NST recommends assessment for long-term housing with high service intensity. Currently, there is no research to validate the specific cutoff scores recommended by the NST tool. These assessments are merely recommendations by the developers, and one of the goals of this article is to explore the appropriateness of these cutoff scores.

The Current Approach to Youth Housing

HUD offers many mandates, guidelines, and best practice recommendations to communities on housing youth (HUD, 2015; HUD, 2016). In most CoCs, housing agencies within a community

pool their housing resources in a centralized system. First, a youth experiencing homelessness enters a centralized intake location (for example, designated emergency shelters, street outreach, or drop-in centers) to sign up for housing support. There, they are assessed for housing eligibility and vulnerability/risk. All of this information is entered into the HMIS. Then, based on these assessments, a case manager or a team of housing navigators decide how a youth is to be prioritized for housing, considering the options available. The youth is then placed on a waiting list until appropriate housing becomes available in the community. Typically, if a young person comes in with a higher risk assessment score than a previously assessed youth, that young person is placed higher on the waitlist; it is, in other words, not a first-come-first-serve system by design.

In many communities, based on the recommendations provided in the NST documentation, youth who score 8 to 17 are designated "high risk" and prioritized for PSH, a resource-intensive, non-time-limited housing program which includes "wraparound" social services (staff support and treatment offered as needed) for youth to assist them in remaining stably housed (Padgett, Henwood, and Tsemberis, 2016). Youth who score in the mid-range (4 to 7) are typically referred to less intensive services, which often appears to be operationalized as RRH, a short- or medium-term rental subsidy program having various social services attached, though there can be considerable variability in the duration of subsidies and the extent and quality of associated services. Some youth who score low (less than 4) often do not ever receive housing resources through the CoC. The NST scoring recommendations are not a hard-and-fast set of rules, thus, we are interested in assessing to what extent communities follow the recommended scoring system.

More importantly, however, the goal of this article is to provide greatly needed evidence to elucidate the pathway from assessment, to housing placement, to outcomes in housing stability (at least in the short-term). There is an overwhelming desire on the part of communities to house youth, and HUD wants community housing systems to be systematic, data-driven, and grounded in research (HUD, 2015; HUD, 2016). Despite this goal, save for a few exceptions (Focus Strategies, 2017), the current housing allocation system for youth has not been evaluated. If we are to understand the value of the NST (or other vulnerability assessment tools), we must understand whether linking high-scoring and mid-scoring young people to particular housing interventions, such as PSH or RRH, actually increases their chances of becoming stably housed. Likewise, it is important to understand whether low-scoring persons (less than 4) are able to successfully exit homelessness without community-provided housing interventions.

This article presents several important pieces of information. First, we explored how many youth who were assessed exited homelessness into different types of housing (for example, PSH, RRH, return to Family, or Self-Resolved), and we examine how these exits varied by NST score. Second, we investigated how NST scores were related to stably exiting local homelessness systems for at least 180 days, again looking into variation by type of housing. Finally, we conducted a series of logistic regressions to determine whether specific NST items can help further differentiate those youth who successfully exited homelessness systems for at least 180 days from the ones who did not. We see these results as potential "red flags" for CoCs who could then provide additional services to youth with particular experiences who may need additional assistance in remaining stably exited from homelessness.

Methods

Data Set

The current data set is an administrative collection acquired by OrgCode on May 1, 2017, from the HMIS database of 16 communities in the United States. These data were collected by communities in the context of assessment for eligibility for housing programs from youth experiencing homelessness, between January 2015 and May 2017. The data set consists of 10,922 youth experiencing homelessness. These records were accessed, anonymized, and provided to the authors by Iain De Jong of Orgcode. The data were collected by service providers in the 16 communities and entered into the HMIS data system.

Variables

The data set includes several key variables which we treat as independent variables. Demographic variables include the youth's age, gender, LGBTQQI2 (Lesbian, Gay, Bisexual, Transgender, Questioning, Queer, Intersex and 2-Spirit) status, race/ethnicity, and type of community. Each record also contains responses to each of the questions asked in the NST tool as well as the overall calculated NST score.

These data include four key exits from homelessness. Two are housing program exits: RRH and PSH. The data did not capture placements in other housing programs, such as transitional housing, nor did it capture supportive services offered with or without housing program placements. These data also include key exits from homelessness that reflect little assistance from the CoC: some youth experiencing homelessness went to live with their family members ("Family" exit type) or were able to find housing themselves or possibly with non-housing support services ("Self-Resolved" exit type). These are the four main homelessness exits we focus on: RRH, PSH, Family, and Self-Resolved.

The first recorded exit in the data set was January 2, 2015, and the last recorded exit was March 29, 2017. There were also exits from homelessness to boarding homes, incarceration, veterans' programs such as Supportive Services for Veteran Families (SSVF), youth who are still pending in the system, and youth who have been lost to the system ("unknown"). There were also a small number of youth (n=68) who died, but they have been removed from these analyses as a deeper investigation of this outcome is needed. Furthermore, the number of youth (n=211) who were incarcerated have also been removed from these analyses considering this situation is a markedly different issue and one also in need of a deeper investigation. Due to small sample sizes for boarding homes (n=8) and veterans' programs (n=54), both exits were removed from the analyses. Three time points are included in this data set: (1) the date of initial assessment with the NST, (2) the date of exit from homelessness (if the youth exited homelessness), (3) the date of return to homelessness (if the youth returned to homelessness and engaged with services linked to the HMIS system such as emergency shelter). Most importantly, for each youth in the data, there are fields specifying whether the youth was still living in the initial housing exit. The first assessment date was January 4, 2015, and the last assessment date was February 20, 2017. The first recorded exit from homelessness was January 24, 2015, and the last recorded exit was March 19, 2017. The first recorded return to homelessness was October 9, 2015, and the last recorded return to

homelessness was April 13, 2017. Many youth were still housed by the end of the observation period, which was May 1, 2017.

Data Analysis

We account for time in two ways in these analyses. The data was downloaded on May 1, 2017. For our investigation of exits from homelessness and stability of exit, we want to provide a minimum time window of 180 days of observation. For our examination of housing exits, we removed those youth who were assessed after November 2, 2016, so as to allow for at least 180 days for youth to be observed attempting to exit homelessness. For our examination of stability of exits, we removed all youth from the data set who did not exit to PSH, RRH, Family, or Self-Resolved. Moreover, we removed any youth who exited homelessness after November 2, 2016, so as to allow for at least 180 days of observation to determine their housing stability. We coded a youth as stably exited from homelessness if they had remained out of the homelessness system for at least 180 days post exit (note "exit" refers to an exit from the homelessness system, and it also marks *entry* into a housing program for those youths placed into RRH or PSH). We present frequency distributions for demographic characteristics in exhibit 1. We present the distribution of homelessness exits by NST score.

To examine how scores and other variables predict stable exits from homelessness for different exit types, we conducted multivariate logistic regression models. The modelling strategy was based on procedures described by Hosmer and Lemeshow (2000) and proceeded as follows: the larger sample was broken into four sub-samples, those youth who exited to PSH, RRH, Family, and Self-Resolved. In each sub-sample, bivariate associations between stable exits, the overall NST score, and each unique item collected in the NST was assessed. Associations which were statistically significant at the p is less than .10 level were retained for the next step. Then multivariate logistic regressions including all significant bivariate associations were run. Subsequently, items were removed one at a time until the final models only containing variables with associations at the p is less than .05 level remained. The overall NST score variable was still constructed by using the full set of items. We retained demographic covariates regardless of statistical significance.

Exhibit 1

Frequency Distributions for Demographic Characteristics (n=10,922)

	n	%
Demographics		
Race/Ethnicity		
Black	3,382	31
Hispanic	1,656	15.2
White	5,212	47.7
Asian	333	3.1
Hawaiian/Pacific Islander	20	0.2
Native American	319	2.9
Gender		
Female	2,429	22.2
Male	8,487	77.8

Exhibit 1

Frequency Distributions for Demographic Characteristics (n=10,922)

	n	%
Sexual Orientation		
LGBQQI2	3,319	30.4
Heterosexual	7,603	69.6
	Mean	**SD**
	19.1	2.66
	n	**%**
Age		
17 or younger	3,303	30.2
18 or older	7,619	69.8
Types of Community		
Rural	1,591	14.6
Suburban	2,046	18.7
Urban	7,285	66.7
Where do you sleep most frequently		
Car	766	7
Couch	665	6.1
Outdoors	798	7.3
Shelter	7,188	65.8
Transitional Housing	1,505	13.8
Homelessness exits[1]		
Family	1,250	12.6
PSH	574	5.8
RRH	2,872	28.8
Self-Resolved	1,140	11.5
Boarding Home	7	0.1
Deceased	45	0.5
Incarcerated	211	2.1
Pending	2,717	27.3
SSVF	54	0.5
Unknown	1,087	10.9
Stably Housed for 180+ days[2]	4,361	88.8

Notes: 1. Among those youth who were assessed by November 2, 2016. (n=9957).
2. Among those youth who exited to PSH, RRH, Family, or Self-Resolved by November 2, 2016, or earlier.

Results

We present frequency distributions of demographic characteristics in exhibit 1. We present the distribution of housing exits by NST scores in exhibit 2 and represent these numbers graphically in exhibit 3. Exhibit 4 presents the percentage of youth who remained stably housed for at least 180 days and the distribution of successful exits by NST score. These numbers are represented graphically in exhibit 5. Exhibits 6 to 9 present the results of the multivariate logistic regression models.

As reflected in exhibit 1, we can see CoCs' across the country housed large numbers of youth. Of the 9,957 youth in the sample who were assessed at least 180 days prior to the observation window closing, slightly more than one-fifth were able to exit homelessness by either finding

housing on their own (Self-Resolve) or returning home with family members (Family). Regarding the other two housing exits in the data set, more youth exited into RRH (28.8 percent) than PSH (5.8 percent). The majority of youth (88.8 percent) were stably exited for at least 180 days following this first exit from homelessness.

Exhibit 1 also presents the demographic profile of the youth in the full sample. The mean age was 19.1. More specifically, 3,303 youth were under 18 years old (30.2 percent) and 7,619 youth were 18 and over (69.8 percent). Slightly less than one-half of the sample was White (47.7 percent) followed by Black (31 percent) and Hispanic (15.2 percent) youth. Asians, Hawaiian/Pacific Islanders and Native Americans accounted for 6.2 percent of the sample. The majority of youth were male. Nearly one-third (30.4 percent) of the sample identified as LGBQQI2. The majority of the youth came from urban communities (66.7 percent) and slept most frequently in shelters (65.8 percent) followed by transitional housing (13.8 percent). Notably, 2,229 youth reported sleeping most frequently in a car, couch, or outdoors (20.4 percent).

Exhibit 2 presents the distribution of youth by NST score for all housing exits with the exception of boarding homes, veterans' programs (SSVF), and death exits. This distribution is also graphically presented in exhibit 3. Most communities reserved PSH for those youth who scored 8 or higher on the NST. Only 15 youth (0.2 percent) who scored less than 8 had an exit to PSH. RRH was most frequently given to youth with an NST score of 5 to 7. Only 14 youth (0.7 percent) who scored 4 or lower had an exit to RRH. Some high scoring youth (8 or higher), however, had an exit to RRH (579, or 20.2 percent of all RRH exits).

Moreover, it is useful to examine how the OrgCode scoring system maps onto actual exits from homelessness. Of the 768 youth who scored 0 to 3 (considered low scores by OrgCode), 253 (32.9 percent) self-resolved, 261 (34.0 percent) returned to family, 1 (0.1 percent) was placed in PSH, 4 (0.5 percent) into RRH, and 249 (32.4 percent) were either lost to the housing system or are still attempting to exit. Among the 6,550 youth scoring 4 to 7 (medium scores), 2,289 (34.9 percent) were placed in RRH, 14 (0.2 percent) were placed in PSH, 875 (13.4 percent) self-resolved, 901 (13.8 percent) returned to family, and 2,451 (37.4 percent) were either lost or still awaiting a housing intervention. Among the 2,532 youth designated at high risk (NST 8 or higher), there were 559 (22.1 percent) PSH exits, 579 (22.9 percent) RRH exits, 88 (3.5 percent) family exits, 12 (0.4 percent) self-resolved exits, and 1,104 (43.6 percent) were either lost or pending housing by the close of the observation period.

Exhibit 2

Distribution of Housing Exits by NST Score (Among youth assessed by November 2, 2016) (n= 9,850)

NST Score	PSH	RRH	Self-Resolved	Family	Incarcerated	Unknown	Pending	Total
1	0	0	9	7	0	2	3	21
2	0	0	55	61	0	28	27	171
3	1	4	189	193	0	80	109	576
4	5	10	471	462	0	214	111	1273
5	3	620	315	223	4	184	515	1864
6	2	899	67	143	9	118	672	1910
7	4	760	22	73	7	121	516	1503

Exhibit 2

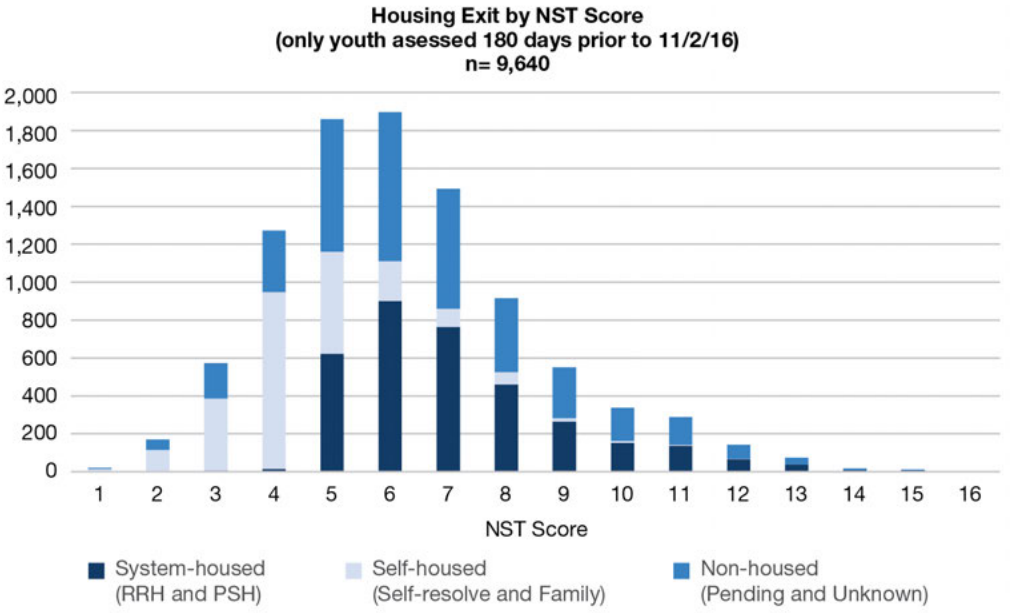
Distribution of Housing Exits by NST Score (Among youth assessed by November 2, 2016) (n= 9,850)

NST Score	PSH	RRH	Self-Resolved	Family	Incarcerated	Unknown	Pending	Total
8	65	397	10	53	12	83	306	926
9	107	157	0	19	36	107	163	589
10	134	19	2	8	44	59	116	382
11	131	5	0	7	50	47	100	340
12	66	1	0	1	21	28	47	164
13	39	0	0	0	15	13	22	89
14	10	0	0	0	6	1	7	24
15	7	0	0	0	6	2	3	18
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0

Note: Boarding homes, veteran's program (SSVF), and death exits were dropped.

Exhibit 3

Distribution of Housing Exits by NST Score.



As exhibit 4 and exhibit 5 show, as NST scores increased, the number of youth who successfully remain housed for 180 or more days decreased. That is to say, higher scoring youth were more likely to return to homelessness after an initial exit from homelessness. This finding is consistent across all four exit types. PSH was associated with more stable exits from homelessness systems for almost every youth: 95 percent of youth scoring 8 or 9 did not reenter the homelessness system for 180 or more days, and more than 90 percent of youth who scored 10 to 13 did not reenter the homelessness system for 180 days or more. Although there is a slight dip in successful exits from homelessness systems among youth placed into RRH at a score of 4, these data come from

only 10 youth. When examining youth scoring 5 to 7, more than 90 percent remained out of the homelessness system for at least 180 days. Moreover, more than 80 percent of the youth who scored 8 and 9 who were given RRH did not reenter the homelessness system for at least 180 days. Family exits appear to be more successful for lower scoring youth. Among youth scoring 1 to 3,

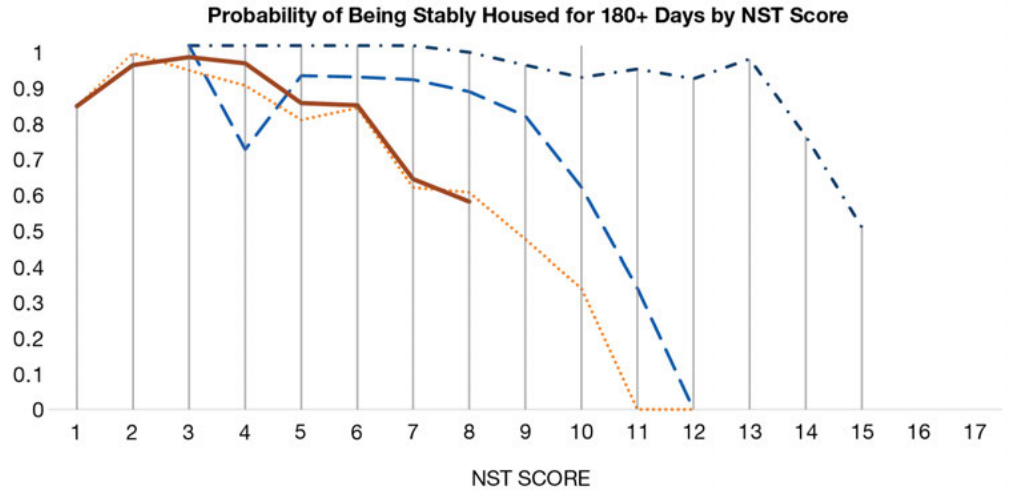
Exhibit 4

Percentage of Youth Who Remained Stably Housed for at Least 180 Days, and the Distribution of Successful Exits by NST Score. (n=4913) (Among youth who exited by November 2, 2016).

NST Score	PSH %	RRH %	Family %	Self-Resolved %
1			83.3	83.3
2			97.9	94.6
3	100.0	100.0	93.2	96.8
4	100.0	71.4	89.0	95.1
5	100.0	91.7	79.5	84.2
6	100.0	91.4	82.8	83.6
7	100.0	90.6	60.9	63.2
8	98.2	87.3	59.6	57.1
9	94.7	80.6	46.7	
10	91.2	61.1	33.3	100.0
11	93.5	33.3	0.0	
12	90.9	0.0	0.0	
13	96.3			
14	75.0			
15	50.0			
16				
17				

Exhibit 5

Percentage of Youth Who Remained Stably Housed for at Least 180 days, and the Distribution of Successful Exits by NST Scores. (Among youth who exited by November 2, 2016).



more than 93 percent remained stably with family for at least 180 days; at a score of 7, this rate dropped precipitously to 61 percent and continued to decline with higher scores. Self-resolved exits showed a similar pattern. Among youth who score 1 to 3, 95 percent or more remained stably exited from homelessness systems for at least 180 days. At a score of 7, however, this rate dropped to only 63 percent and declined further with higher scores.

The multivariate models presented in exhibits 6 to 9 provide additional information about the NST score's association with stable exits from homelessness systems for at least 180 days as well as on specific items from the NST that are positively and negatively associated with stable exits. In all four models, there is a significant negative association between NST score and stable exits from homelessness systems, which can also be seen graphically in exhibit 5. Exhibit 6 indicates that, other than NST scores, only the duration of the last homelessness episode was significantly associated with stable exits into PSH. Exhibit 7 suggests there is a 65-percent reduction in the odds of remaining stably housed in RRH if a youth exited from transitional living programs into RRH compared to those youth from the street. Exhibit 8 suggests that racial/ethnic minority youth, relative to white youth, experienced a 43 percent reduction in the odds of successfully remaining with family for 180 or more days. Moreover, youth who experienced conflict around sexual or gender identity had a 54 percent reduction in the odds of remaining stably exited from the homelessness system, and youth with pregnancy histories experienced a 52 percent reduction in the odds of remaining stably exited. Exhibit 9 suggests that youth under the age of 18 experienced an 81 percent reduction in the odds of remaining stably self-resolved for 180 days or more. In addition, relative to rural communities, both urban and suburban dwelling youth experienced a reduction in the odds of successfully self-resolving, with a 63 percent reduction for suburban youth and a 57 percent reduction for urban youth.

Exhibit 6

Multivariable Logistic Regression Models of Stable Exits to PSH for at Least 180 days.

			PSH Exit (n=479)		
	β	S.E.	OR	95% CI	
Demographics					
17 or Younger	1.20	0.75	3.32	[0.76, 14.57]	
Female	-0.21	0.38	0.81	[0.33, 1.99]	
LGBTQQI2	0.06	0.38	1.06	[0.50, 2.23]	
Minority	-0.35	0.38	0.70	[0.33, 1.49]	
Homeless History					
Duration of last homeless episode	0.00	0.00	1.00	[1.00, 1.00]	*
Trauma History/Risk					
Final Acuity Score	-0.33	0.11	0.72	[0.58,0.90]	**
Pseudo R^2	0.07				

*Note: *p is less than .05; **p is less than .01*

Exhibit 7

Multivariable Logistic Regression Models of Stable Exits to RRH for at Least 180 days.

		RRH Exit (n=2436)			
	β	S.E.	OR	95% CI	
Demographics					
17 or Younger	-0.16	0.16	0.85	[0.62, 1.17]	
Female	0.29	0.19	1.34	[0.93, 1.94]	
LGBTQQI2	0.08	0.16	1.08	[0.92, 1.53]	
Minority	-0.08	0.14	0.92	[0.79, 1.47]	
Living Situation					
Couch	-0.78	0.40	0.46	[0.21, 1.01]	
Outdoors	0.37	0.48	1.45	[0.57, 3.69]	
Shelter	0.56	0.29	1.75	[0.99, 3.12]	
Transitioning Housing	-1.06	0.31	0.35	[0.19, 0.64]	**
Trauma History/Risk					
Final Acuity Score	-0.30	0.06	0.74	[0.66, 0.84]	***
Pseudo R^2	0.09				

*Note: *p is less than .05; **p is less than .01; ***p is less than .001*

Exhibit 8

Multivariable Logistic Regression Models of Stable Exits to Family for at Least 180 days.

		Family Exits (n=1031)			
	β	S.E.	OR	95% CI	
Demographics					
17 or Younger	0.81	0.16	0.81	[0.55, 1.18]	
Female	0.89	0.18	0.89	[0.61, 1.32]	
LGBTQQI2	1.23	0.27	1.23	[0.80. 1.90]	
Minority	0.57	0.1	0.57	[0.40, 0.81]	**
Trauma History/Risk					
Conflicts around gender identity/ sexual orientation	0.46	0.15	0.46	[0.24, 0.86]	*
Pregnancy History	0.48	0.17	0.48	[0.24, 0.96]	*
Final Acuity Score	0.64	0.03	0.64	[0.58, 0.71]	***
Pseudo R^2			0.12		

*Note: *p is less than .05; **p is less than .01; ***p is less than .001*

Exhibit 9

Multivariable Logistic Regression of Stable Self-Resolved Exits for at Least 180 days.

		Self-Resolved Exit (n=967)			
	β	S.E.	OR	95% CI	
Demographics					
17 or Younger	0.19	0.05	0.19	[0.12, 0.31]	***
Female	0.71	0.19	0.71	[0.42, 1.19]	
LGBTQQI2	0.74	0.2	0.74	[0.44, 1.26]	
Minority	1.19	0.29	1.19	[0.74, 1.92]	
Community Types					
Suburban	0.37	0.15	0.37	[0.17, 0.83]	*
Urban	0.43	0.16	0.43	[0.21, 0.90]	*
Trauma History/Risk					
Final Acuity Score	0.53	0.06	0.53	[0.43, 0.66]	***
Pseudo R2			0.16		

*Note: *p is less than .05; **p is less than .01; ***p is less than .001*

Discussion

To our knowledge, these findings are the first data that link NST assessment scores to particular exits from homelessness and include longitudinal information on returns to homelessness systems. There are several important findings which emerge from this analysis. First, most communities appear to be approximately using OrgCode's recommended thresholds for housing interventions. That is, PSH placements were largely extended to youth scoring 8 or higher, RRH to youth scoring 5 to 7[1] , and neither PSH nor RRH were provided to many youth scoring 4 or less. It is not necessarily surprising these 16 communities are following the Orgcode recommended scoring system, given HUD's encouragement of communities to use such tools (HUD, 2015; HUD, 2016).

The proportion of youth who succeeded in a given housing exit declined as NST scores increased. Looking across all four main types of housing exits provides a picture of the capacity for NST score to not only predict vulnerability, but also to predict who is likely to do better in different types of exits from homelessness. Youth who scored 4 or less, if they exited to family or self-resolved, had a high likelihood of success—measured, in this case, as no recorded returns to the local homelessness system for at least 180 days. Youth who scored 5 to 9 generally did well in RRH for at least a six-month period. Almost all youth receiving PSH had low recorded returns to homelessness within at least six months, even at very high scoring levels. Unfortunately, these data do not include any information about specific social services attached to PSH or RRH, nor on the duration of RRH rental assistance. Such information would be useful to further understand the factors contributing to successful or unsuccessful housing placements.

RRH generally appears to be a useful housing intervention for those youth with an NST score of less than 10. We believe more experimentation with higher scoring youth may be warranted—using a more rigorous impact evaluation design and longer-term follow-up periods—particularly

1 OrgCode guidance is for moderate-intensity time-limited housing and services to be provided to young people scoring 4 to 7.

in communities where PSH is not readily available but RRH is available. Perhaps a progressive engagement approach may be warranted, wherein youth scoring 10 or higher are first given RRH and then PSH if they are unsuccessful with RRH. Furthermore, additional experimentation with the lengths of RRH rental subsidy, approaches to youth and landlord engagement, and supportive services may help to refine RRH programming to meet the needs of youth with different levels and types of vulnerability.

Many low scoring youth appear able to exit homelessness systems either on their own as "Self-Resolved" or to "Family". The percentage of youth who successfully remained self-resolved or with family dropped dramatically as their NST score increased. Clearly, higher scoring youth need more assistance. Notably, however, 27.3 percent of the youth who scored less than 4 did not exit homelessness. It is possible evidence-based family reunification services, such as the Support to Reunite, Involve, and Value Each Other (STRIVE) project (Milburn et al., 2012), may increase the viability of family housing outcomes for this group of youth. Presumably, some of these youth do not have a safe or viable family to be the focus of reunification. For some youth who are unable to return to home or self-resolve quickly, RRH, transitional housing, or other forms of assistance may be an appropriate intervention, even for youth with an NST score less than 4. Importantly, transitional living programs or transitional housing—funded, for example, by the U.S. Department of Health and Human Services (HHS) for youth experiencing homelessness—could be a useful resource for some young people requiring housing and youth-centric services and supports for a defined period of time, but, because such programs were not included in the data as an exit type (because they are not funded and considered by HUD to be an exit from homelessness), we were unable to evaluate and compare results for this kind of intervention.

These success rates by score, and the distribution of scores, may provide added insight into how communities could consider adjusting guidance around the current scoring system, particularly considering our understanding that many communities may want to reserve PSH for youth scoring 10 or higher. PSH is very expensive relative to RRH and other time-limited housing programs with moderate-intensity services. Yet, 87 percent of youth who scored 8, and 81 percent who scored 9, and were given RRH did not reenter the homelessness system for at least 180 days. Only 11 percent of youth in the sample scored 10 or higher, and perhaps these youth should be prioritized for limited and resource-intensive PSH.

It is worth noting that, across these communities, 15 percent of the population scored 8 or 9, which means, rather than needing to find PSH for 25 percent of youth, we may be able to focus PSH on the 11 percent or so who score 10 or higher and who are less likely to succeed without more intensive resources. Comparing the success of PSH to that of RRH and/or other time-limited housing interventions with youth scoring 8 to 9 on NST, along with more rigorous evaluation and longer-term follow-up periods, would be a useful area for future experimentation.

Moreover, although lower scores were associated with lower likelihood of remaining pending or unknown in the homelessness system, 27 percent of the youth who scored less than 4, nonetheless, never exited homelessness systems during the observation period. We ought to provide more intensive supports and/or housing interventions (perhaps RRH or maybe transitional living) for this subset of low scoring youth who are unable to return home or self-resolve in a short period of time.

An extension of youth-centric RRH to lower and higher scoring youth, with a concurrent contraction to 10+ for most PSH placements, would likely present cost savings to communities in the long run and allow for serving a larger number of youth more quickly. Additional research is needed to determine whether there are predictors of low scoring youth who are unable to self-resolve or return to their family without some type of housing intervention. Furthermore, prospective evaluation and a cost analysis of our proposed changes in the scoring guidance are needed.

While our findings suggest the scores are generally meaningful predictors of young people's risk of remaining homeless or returning to homelessness systems, the scores by themselves still represent limited information and offer a blunt basis for good decision making with individual youth. To this end, the logistic regression results provide an understanding of "red flags" for specific youth who may need additional services in order to help them succeed in given exit types. For example, we believe the result of the regressions for family exits indicate minority youth, and youth who have conflict with family about sexual orientation or gender identity, are in greater need of better-suited family reunification services and/or other support services to help sustain their family exits or to achieve housing stability outside of the family.

While this study is based on an unprecedented longitudinal administrative data set linking intake assessment scores and variables to service placements and outcomes across multiple communities, it also has several limitations that signal areas for data improvements and future research. First, stable housing outcomes are identified as youth either still being in a program or exiting to a stable housing situation and NOT subsequently returning to the local homelessness system (for example, to a shelter in the CoC) for at least six months and being recorded in the Homeless Management Information System. Youth who became homeless again but did not reenter the local homelessness system would have been falsely coded as a successful outcome. It is likely some number of youth do return to homelessness in ways that are not recorded in HMIS, or return to the local homelessness system later than the duration of the data set's observation period, but we have no way of knowing how many. Second, we need more data and larger sample sizes to better understand how RRH works particularly for youth who score 10 or higher. Third, there is no information about the types or quality of services delivered to youth or the frequency of contact these youth had with personnel in the housing system. Even youth that were indicated as having "self-resolved" exits could have received non-housing services that were vital to their exits from homelessness.

Fourth, the data do not include all types of housing programs in which youth could be placed. Perhaps most importantly in this respect, the data do not include exits to transitional living programs that are primarily funded by HHS and other non-HUD funding streams. In future research, it would be very useful to compare results associated with different housing interventions—for example, between RRH and transitional housing for youth with different characteristics and degrees of vulnerability—so that communities could make the most informed decisions about their inventories of housing programs for youth.

Fifth, as these results are administrative data, we only have information on youth who had contact with a specific CoC. Many youth experience homelessness but do not come into contact with the local CoC. Similarly, if youth came into contact with the CoC but left that community, or

became homeless again but did not reengage with the local CoC, we have no information on their subsequent outcomes.

Sixth, this study was not designed as an impact evaluation. We can examine administratively-recorded housing stability over time associated with a few broad types of exits/programs, but there was no prospective control group, and youth were not assigned randomly to different interventions. As such, results associated with housing programs like RRH and PSH could be biased by unobserved characteristics. For example, selection bias could emerge if case managers allocated RRH spaces to a youth scoring a 7 who she/he thought more likely to succeed in the program and not to a youth scoring a 7 who she/he thought less likely to succeed in the program. The results are promising but should encourage more rigorous evaluation of such housing programs to better understand their effectiveness and under what circumstances.

Finally, there are gaps in both the NST tool and the outcomes data available that limit the depth of the analysis possible. For example, as a triage tool, the NST focuses on risk factors but lacks information on young people's strengths and assets, which could play important roles in informing appropriate service connections or predicting housing stability. Additionally, beyond a simple HMIS-based indicator of housing stability (not returning to the local homelessness system for at least 180 days), it would be useful to capture and analyze information on a broader range of outcome areas—such as those proposed by the U.S. Interagency Council on Homelessness's (USICH) *Framework to End Youth Homelessness*, which advises systems and services to also target and collect data on education and employment, positive social connections, and social-emotional wellbeing outcomes (USICH, 2013).

Policy Recommendations

Ultimately, as youth service providers contend with the abhorrent reality of how to prioritize and place young people in the precious few spots available in housing programs, this study elucidates the importance of using an evidence-informed triage tool like the NST to assess vulnerability to facilitate more efficient and informed prioritization decisions at the local level. Furthermore, PSH is associated with very low likelihood of returns to homelessness for any youth, regardless of NST score, emphasizing the compelling promise of this housing model. At the same time, PSH is a relatively expensive form of intervention, and less intensive housing interventions may be more cost-effective for lower acuity youth. To this end, the results suggest RRH may be a useful solution for many youth with an NST score less than 10. Communities may feel more assured about connecting these youth with time-limited and less service-intensive based programs like RRH if they have a decision aid indicating a likelihood to succeed in such programs. By using RRH for less at risk youth, the limited and more costly PSH spaces can be maintained for youth with a higher vulnerability score.

Nonetheless, further evaluation with longer-term follow-up periods is necessary regarding the effectiveness of this model for high-scoring youth; providers should continue to be cautious when deciding on which youth to assign to RRH. Greater attention to case management services that specifically address family reunification and other "diversion" and prevention services is recommended for those youth with an NST score of 4 or less. These evaluations may also include

identification of youth who will be unable to self-resolve or return to family and who should be considered for RRH—or other programs not captured in these data, such as transitional housing—after a period of time.

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