Preventing Homelessness:

Evidence-Based Methods to Screen Adults and Families at Risk of Homelessness in Los Angeles

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CONTENTS

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1 https://www.capolicylab.org/cpl-homelessness-prevention-community-advisory-board/

I. Executive Summary

The overall homeless population in Los Angeles County continues to grow as inflows into homelessness outpace exits to housing. The key to preventing homelessness is to ensure scarce prevention resources are going to people who will become homeless without those resources. In this study, we evaluate the surveys used to screen adults and families who *self-identify* as being at risk of homelessness. Specifically, we evaluate screening surveys called Prevention Targeting Tools (PTTs) currently used by homelessness prevention service providers in the City and County of Los Angeles. The PTTs are used to determine whether people are eligible for prevention services. Participants seeking prevention services must first meet two eligibility criteria: they must be at imminent risk of homelessness (*i.e.*, will lose housing within 30 days) and have an income at or below 50% of the Area Median Income (AMI) for Los Angeles County. If they meet those criteria, they take the PTT, their answers are assigned points, and then a total score determines eligibility for services. There are separate versions of the PTTs for families, single adults, and transition-age youth (TAY). Those eligible for prevention typically receive short-term financial assistance (*e.g.*, rental assistance, utility assistance) ranging on average between $1,000 to $5,000, legal assistance, and/or mediation with landlords or property managers.

Guided by the following research questions, we developed improved PTTs that can be used in a variety of different settings to determine eligibility for homelessness prevention programs among people who self-identify as being at risk.

1. **Are there homelessness risk factors that are not currently captured on the PTTs that could be added to the PTTs to potentially improve their ability to predict future homelessness?**
2. **How can the wording and structure of the PTTs be improved to maximize the validity of responses?**
3. **What improvements can be made in the PTT administration process in order to more accurately capture information on at-risk individuals and families?**
4. **Can reweighting PTT questions and removing questions from the PTTs result in shorter, more accurate screening tools?**

Summary of Key Findings

As a result of this research, we are proposing revised tools for single adults, families, and TAY. The proposed tools are available in Appendix B: Revised Family, Adult and Transition-Age Youth PTTs. We also recommend changes to how the tools are administered and a continuous improvement process. Below is an overview of our research findings and how they shaped the composition and scoring of the new tools.

Questions to be added to the tools (Research Question 1)

We found that recent hospital emergency room usage and lack of health insurance are strongly correlated with risk of future homelessness. Thus, we recommend two additional PTT questions: (1) Within the last six months, has anyone in your household gone to a hospital emergency room for medical care? (2) Do you lack health insurance?[2]

Changes to the wording and structure of questions (Research Question 2)

In interviews with prevention service providers, prevention participants, and people with lived expertise in homelessness,[3] we found three major themes:

1. Sensitive questions (*e.g.*, questions about mental health, physical disability, domestic violence) are difficult for service providers to ask and for participants to answer.
2. Many PTT items include confusing terms (*e.g.*, "doubled up") that make questions difficult to comprehend. There are currently no standardized definitions for these terms.
3. Participants have difficulty recalling how many times they have experienced homelessness and eviction.

Based on these findings, we reworded the questions on the Adult, Family, and TAY PTTs to make them easier to understand and to make participants feel more at ease discussing sensitive topics (see Appendix B: Revised Family, Adult and Transition-Age Youth PTTs). We have also created a Draft PTT Glossary (Appendix E) that includes simple definitions for difficult terms on the PTT. These definitions are based on feedback we got from providers on how they explain difficult terms to participants.

2 For the first year or so, responses to these questions would be collected but the point values for the questions would be zero. Once we collect data on these two new PTT questions, we can determine appropriate weights for these questions based on their predictive power relative to other PTT questions.

3 Many Los Angeles advocates who were formerly homeless and who are now advising on the design and function of homeless services prefer the phrase "person with lived expertise" or "lived expert" to fully reflect their work and contributions.

In addition, we converted all PTT items into questions. The current PTTs are phrased as checklist items rather than questions, *e.g.,* "At least one dependent child under age 6" rather than "Are there any children in your household under the age of 6?" Service providers report that they rephrase the checklist items as questions when they administer the PTTs to participants. Using a standard set of questions will help ensure that data collection is more uniform, regardless of who is administering the PTT.

In addition, we recommend that questions be grouped by theme to make the administration process easier and more conversational and that sensitive questions be placed towards the end of the PTT when possible so that service providers have an opportunity to build rapport before they discuss sensitive topics.

Changes to tool administration (Research Question 3)

During our interviews, we also discussed challenges with administering the PTT. To improve PTT administration, we recommend centralizing PTT administration, providing standardized training on administering the PTT and the eviction process, and ensuring that staff administering the PTT make use of supporting documents (non-English versions of the PTT when needed, standard eviction process diagram). In addition, we drafted a list of best practices and scripts to use before administering the PTT and prior to asking particularly sensitive questions (*see* Appendix F: PTT Administration Best Practices and Sample Scripts). This document is based on provider feedback and relevant literature on administering sensitive surveys.

Increasing accuracy by reweighting and/or changing the PTT thresholds (Research Question 4)

We investigated whether existing data could be used to improve the predictive accuracy of the tools. Specifically, our goal was to understand whether changing the weights for each item or the corresponding thresholds would result in PTTs that more accurately predict which adults and families would become homeless. As part of this analysis, we also assessed whether the available data would allow for the tools to produce generalizable risk factors for homelessness. We concluded that this was not possible for the following reasons. First, all adults and families in the sample met the first two eligibility criteria (imminent loss of housing, income ≤ 50% AMI). In addition, 90% of single adults and 80% of families who took the current versions of the PTTs met the minimum threshold for receiving prevention services. This means that the vast majority of the adults and families in the sample met all pre-determined risk factors for homelessness. Because so many people already met the thresholds, it shifts the research question to "among this very high risk group, which questions on the PTT help identify the very highest risk group?" To give a specific example, when 83% of the survey respondents report earning 30% of AMI or lower, answering "yes" to that question does less to distinguish that person or family from the rest of the people who took the survey. But asking that question of a larger group of people (with more

variation in their levels of income) who may be at risk of homelessness could help to better target homelessness prevention services to those most in need.

Within the context described above, we were able to recommend changes that improve the PTT's ability to identify risk among the sample population in Los Angeles. Based on interviewee feedback, we restructured the PTT by simplifying the questions about eviction, homelessness, and income into fewer categories; removing the question about sex offender status; and removing the question about fleeing domestic violence.[4]

After restructuring the PTTs, we used a predictive modeling framework to reweight the PTT items and to compare the predictive performance of the current PTTs against the proposed PTTs. The restructured and reweighted Family PTT resulted in a marked improvement. We recommend our restructured and reweighted Family PTT, which includes a new eligibility threshold (that can be adjusted upward or downward depending on demand for prevention services). Reweighting did not produce more accurate predictions for the Adult PTT. However, restructuring alone led to slight improvements and we recommend a restructured Adult PTT. We had very little data on the TAY PTT, so we could not generate weights for modified questions or evaluate the performance of different thresholds. However, we recommend applying the same PTT restructuring that we recommended for the Family and Adult PTTs to the TAY PTT. (Revised Family, Adult and TAY PTTs are in Appendix B.)

Data Quality Issues & Generalizability

Our interviews and data exploration indicated that the PTTs are typically administered after participants have already received some form of triaging within a service provider. As a result, the available data lacks generalizability to a wider population and our results may not apply to individuals who are not observed in the data. To reduce bias in the outcome and bias in sample selection, all PTT responses and scores should be recorded (regardless of whether an individual or household received prevention services) and the PTT should be given to all people seeking homelessness prevention assistance (rather than triaging individuals and households before administering the PTT).

Continuous Improvement

We recommend that the predictive modeling analysis be repeated after changes to data collection are implemented. By re-running the analysis on a regular basis, it will be possible to measure if these changes (to the tool and the training of people administering the tool) are having the desired effect of improving the predictive power of the tools and if further improvements are needed.

4 We removed the question about fleeing domestic violence because a person or household fleeing domestic violence is homeless under HUD's definition and should be connected with services meant for people already experiencing homelessness rather than prevention. However, we recommend adding a PTT question about domestic violence-related issues in the home so that the PTT still captures domestic-violence related homelessness risk.

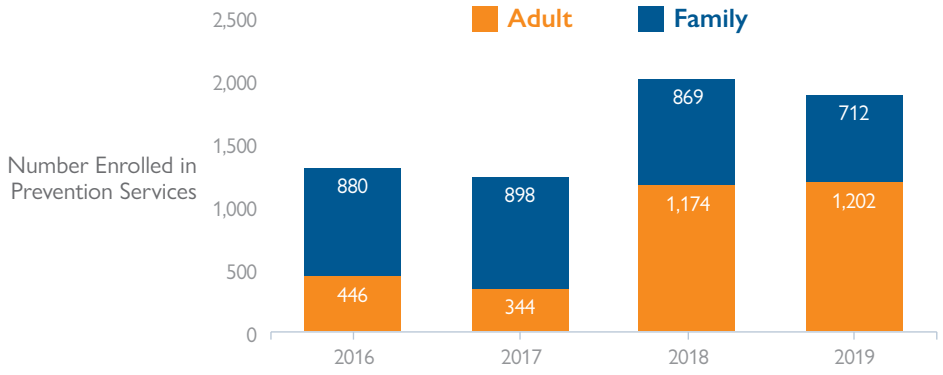
II. Introduction and Background

A. Policy Problem and Research Questions

In response to Los Angeles' homelessness crisis, voters in Los Angeles County passed Measure H in 2017, agreeing to increase their taxes to fund an estimated $355 million in additional homeless services each year.[5] Between July 2019 and November 2020, 26,083 individuals entered permanent housing as a result of Measure H funding.[6] However, the overall population experiencing homelessness in Los Angeles County continues to grow as inflows into homelessness outpace exits to housing. According to the 2020 Greater Los Angeles Homeless Count, the homeless population in Los Angeles County was 66,436 on a single night, a 12.7% increase from the 2019 count.[7]

Long-term solutions to homelessness require not just housing people who become homeless but also preventing homelessness before it occurs. Stemming inflows is particularly critical now as the economic impacts of the COVID-19 pandemic and the lifting of eviction stays will likely result in more people becoming homeless. Existing homelessness prevention programs typically involved providing one-time cash assistance ranging on average between $1,000 to $5,000 and short-term direct services such as legal assistance. Prevention enrollments for families, single adults, and TAY from 2016 to 2019 are illustrated in Figure 1.

FIGURE 1. Prevention enrollments for families, single adults, and TAY from 2016 to 2019



Source: Homeless Management Information System (HMIS) data from the Los Angeles Homeless Services Authority

5 "The Homeless Initiative," LA County, available at http://homeless.laCounty.gov/.

6 Los Angeles County Homeless Initiative (Nov. 2020). Quarterly Report No. 18. Retrieved from https://homeless.lacounty.gov/wp-content/uploads/2020/12/Homeless-Initiative-Quarterly-Report-No.-18.pdf

7 LAHSA: "2020 GREATER LOS ANGELES HOMELESS COUNT SHOWS 12.7% RISE IN HOMELESSNESS DESPITE SUSTAINED INCREASE IN NUMBER OF PEOPLE REHOUSED." (June 12, 2020), available at https://www.lahsa.org/news?article=726-2020-greater-los-angeles-homeless-count-results.

Evaluations of homelessness prevention programs highlight the potential of these programs to reduce inflows into homelessness. A study in Chicago found that providing one-time cash assistance to individuals experiencing a housing crisis reduced shelter entry and resulted in overall cost savings to the city through decreased shelter use.[8] A study of New York's prevention program, which includes direct services and financial assistance, found that it reduced future shelter stays and also resulted in overall cost savings.[9] However, research also highlights how difficult it is to ensure that finite prevention resources reach people who would otherwise become homeless if they did not receive this help because homelessness is statistically very rare, even among people living in poverty.

In previous work, we explored strategies to proactively identify adults at risk of homelessness using predictive modeling. In this study, however, we evaluate the surveys used to screen adults and families who self-identify as being at risk of homelessness. Specifically, we evaluate screening surveys called Prevention Targeting Tools (PTTs) currently used by homelessness prevention services providers in the City and County of Los Angeles to determine whether people are eligible for prevention services. Participants answer questions, their answers are assigned points, and then a total score determines eligibility for services. There are separate versions of the PTTs for families, single adults, and transition-age youth (TAY). Preliminary evidence from our evaluation of Measure H-funded prevention services[10] demonstrated that these tools could be improved to better assess risk of homelessness.

Our project aimed to improve the Prevention Targeting Tools by answering the following research questions:

1. **Are there homelessness risk factors that are not currently captured on the PTTs that could be added to the PTTs to potentially improve their ability to predict future homelessness?**
2. **How can the wording and structure of the PTTs be improved to maximize the validity of responses?**
3. **What improvements can be made in the PTT administration process in order to more accurately capture information on at-risk individuals and families?**
4. **Can reweighting PTT questions and removing questions from the PTTs result in shorter, more accurate screening tools?**

8 Evans, W. N., Sullivan, J. X., & Wallskog, M. (2016). The impact of homelessness prevention programs on homelessness. *Science*, *353*(6300), 694–699. Retrieved from https://science.sciencemag.org/content/353/6300/694/tab-pdf.

9 Rolston, H., Geyer, J., Locke, G., Metraux, S., & Treglia, D. (2013). Evaluation of HomeBase community prevention program. *Final Report, Abt Associates Inc,* June, 6, 2013. Retrieved from https://www.abtassociates.com/sites/default/files/migrated_files/cf819ade-6613-4664-9ac1-2344225c24d7.pdf.

10 von Wachter, T., Rountree, J., Buenaventura, M., Blackwell, B., & Obermark, D. (2019). Evaluation of Los Angeles County Measure H-Funded Homelessness Prevention Strategies. Retrieved from https://www.capolicylab.org/evaluation-of-los-angeles-county-measure-h-funded-homelessness-prevention-strategies/.

Guided by these research questions, we developed improved PTTs that can be used in a variety of different settings to determine eligibility for homelessness prevention programs among people who self-identify as being at risk of homelessness. Improved tools will help the city and county scale homelessness prevention programs at a moment when the economic fallout from the COVID-19 pandemic is placing vulnerable individuals and families at greater risk of losing housing.

B. Los Angeles Homelessness Prevention

There are three primary programs in Los Angeles County that aim to prevent individuals and families at risk of homelessness from becoming homeless: (1) Measure H-funded[11] homelessness prevention for adults, families and TAY, (2) problem solving, and (3) Solid Ground for families. LAHSA contracts with homeless service providers to administer Measure-H funded prevention, which typically includes: short-term financial assistance (*e.g.*, rental assistance, utility assistance), housing-conflict resolution and mediation with landlords and/or property managers, and/or legal assistance.[12] As a short-term intervention, prevention services are typically provided for up to six months. Problem solving (previously known as "diversion") is a related but distinct intervention also administered by homeless service providers contracted by LAHSA. Service providers engage both people who are already homeless and people who are at risk of homelessness in "problem solving conversations." The goal of problem solving is to stabilize a participant's current (or new) housing arrangement (either where the participant is currently located, or an alternate, safe and stable housing arrangement) and remove the immediate need for additional homeless services including emergency shelter, rapid re-housing, or transitional housing.[13] It is unclear why LAHSA-contracted service providers route some individuals and families who self-identify as being at risk of homelessness to problem solving, while others are screened for prevention using the PTT.[14]

The City of Los Angeles launched a separate prevention program for families called Solid Ground. This program is administered by FamilySource Centers located throughout the City of Los Angeles and one FamilySource Center in Van Nuys.[15] FamilySource Centers are located in high-need areas primarily in the City of Los Angeles and provide a continuum of services designed to assist low to moderate-income families, *e.g.*, financial counseling and referrals to community

11 Voters in Los Angeles County passed Measure H in March 2017, agreeing to increase their taxes to add an estimated $355 million in homeless and homelessness prevention services each year. In December 2019, we completed an evaluation of homelessness prevention strategies funded by Measure H. One key finding from the evaluation gave rise to this PTT improvement project: Our preliminary analysis of the historical PTT data that was available at the time of the evaluation suggested that the accuracy and efficiency of the PTT screening tool could be improved by reweighting the tool and eliminating certain questions.

12 LAHSA, 2018–2019 Prevention & Diversion Scope of Required Services, at para. 11.

13 LAHSA, (Oct. 23, 2017). "CES for Families Operations Manual 2017–2018, version 2.0."

14 As we learned during conversations with our CAB, there are no specific guidelines regarding why some people are routed to problem solving rather than prevention.

15 Solid Ground Program Flyer (2020). Retrieved from http://www.chirpla.org/events/solid-ground-program.

resources. While FamilySource Centers serve low and moderate-income families, homeless service providers who administer traditional Measure H-funded prevention programs typically serve people experiencing homelessness. Solid Ground offers up to three months of financial assistance for rent, utility arrears, transportation, and/or food and a year of wraparound services that include financial coaching, counseling, and aid with opening a savings account.[16] Individuals and families who apply for Measure H-funded prevention and Solid Ground must attain a PTT score above a threshold in order to be eligible for services. Individuals and families enrolled in problem solving do not take the PTT.

The target population, eligibility criteria, primary program components, and duration for (1) Measure H-funded homelessness prevention, (2) problem solving, and (3) Solid Ground are summarized in Table 1.

TABLE 1. Comparison of Problem Solving, Measure H-funded Prevention, and Solid Ground Programs[17]

	PROBLEM SOLVING	PREVENTION	SOLID GROUND
Target Population	All households (TAY, Single Adults, Families)	All households (TAY, Single Adults, Families)	Families
Housing Status	Literally homeless, Imminently at-risk*	Imminently at-risk*	Imminently at-risk*
Income	(At or below) 50% AMI	(At or below) 50% AMI**	(At or below) 50% AMI
PTT Score	No score required	19+ (single adults, TAY) 21+ (families)	21+ (families)
Possible Services	Cash assistance, coaching/problem solving,mediation and conflict resolution, connection to other resources, housing search/stabilization assistance	Security deposit, rental assistance/arrears, utility arrears, move in expenses, transit costs related to housing, legal assistance, mediation and conflict resolution	Security deposit, rental assistance/arrears, utility arrears, move in expenses, transit costs related to housing, legal assistance, mediation and conflict resolution (up to 3 months) + wraparound services that include financial coaching, counseling, and aid with opening a savings account (1 year)
Service Length	Up to 30 days	Up to 6 months	Up to 3 months

*Los Angeles County adopted a 30-day window for determining imminence, and thus individuals and families who receive a 30-day notice potentially meet the "imminently at-risk of homelessness" requirement.

**If a participant is in subsidized housing AND received homeless housing assistance, they can qualify with income at or up to 80% AMI.

16 "L.A. to expand programs to help prevent people from becoming homeless." The Eastsider (Feb. 6, 2020). Retrieved from https://www.lamayor.org/momentum-solutions-homelessness

17 Sources: LAHSA, 2018–2019 Prevention & Diversion Scope of Required Services; LAHSA, 2018–2019 Problem-Solving Scope of Required Services; "L.A. to expand programs to help prevent people from becoming homeless." The Eastsider (Feb. 6, 2020). Retrieved from https://www.lamayor.org/momentum-solutions-homelessness; Solid Ground Program Flyer (2020). Retrieved from http://www.chirpla.org/events/solid-ground-program; Solid Ground intake materials from 2021 are on file with the California Policy Lab.

C. Prevention Targeting Tools

As noted above, LAHSA uses three Prevention Targeting Tools — specific to families, adult individuals, and TAY — to determine eligibility for prevention services. Abt Associates oversaw the targeting tool development process, which included a review of research on risk factors for homelessness and solicitation of feedback from groups with lived expertise[18] (*e.g.*, Lived Experience Advisory Group and the Homeless Youth Forum of Los Angeles) and from LAHSA operations committees (*e.g.*, CES Operations Team and the Youth Leadership Team). The three general categories of questions included in these tools are summarized below.

1. Housing status and imminent loss of housing
    - Loss of housing means the household will experience literal homelessness — either on the streets or staying in an emergency shelter.
    - Imminent loss of current housing must be verified with a "pay or vacate" notice from a landlord or property manager, lease holder, or motel/hotel; ledger record of past due rent; or court paperwork showing the prospective participant is at-risk of losing housing.
2. Vulnerabilities and housing barriers
    - Gross income
    - Significant loss in income in past 60 days
    - Eviction history
    - Required to register as a sex offender
    - History of literal homelessness
    - Adversity or housing disruptions during childhood
    - Currently involved in child protective services
    - Trauma or event such as death of a family member, separation, divorce, birth of child
    - Recently discharged from an institution (*e.g.*, hospital, jail, psychiatric facility)
3. Local policy priorities
    - Individuals who were housed through homeless housing assistance programs
    - History of involvement in the foster care or criminal justice system
    - Disability
    - 55+ years old
    - Residing in permanent supportive housing or living in a unit using a Housing Choice Voucher or under rent control

The current PTTs are attached to this report in Appendix A.

18 Many Los Angeles advocates who were formerly homeless and who are now advising on the design and function of homeless services prefer the phrase "person with lived expertise" or "lived expert" to fully reflect their work and contributions.

D. Homelessness Prevention Targeting Tools in Other Jurisdictions

Other homelessness prevention targeting tools are currently being administered in various parts of the United States. In order to inform our effort to improve the PTTs, we reviewed some of these tools and literature on these tools to determine how the risk factors included on the tools were selected and weighted and whether these tools have been validated.

HomeBase Tool: The HomeBase Universal Pre-screen tool is an evidence-based tool used by providers in New York City to determine eligibility for the HomeBase prevention program. Serving New York City's five boroughs, the HomeBase program provides individuals and families with case management, eviction prevention, landlord mediation, and short-term emergency funding. Administered via an online platform, the tool consists of two pages of survey questions.

Shinn *et al.*[19] and Greer *et al.*[20] developed and evaluated the family screening tool and a single adult screening tool for HomeBase. They reviewed literature to identify categories of risk factors for homelessness that would be incorporated into survey questions: persistent poverty, behavioral disorders, impoverished social networks, and loss of affordable housing. They then used data from two sources to capture risk factors for homelessness within these domains:

1. **HomeBase intake workers surveys:** demographic variables, human capital (*e.g.*, GED, currently employed), housing conditions (*e.g.*, doubled up), disability, interpersonal discord (*e.g.*, domestic violence), childhood experiences, and shelter history; and
2. **New York City Department of Homeless Services administrative records:** applicants' previous interactions with the DHS shelter system, and the date of any subsequent shelter entry (outcome variable).

19 Shinn, M., Greer, A. L., Bainbridge, J., Kwon, J., & Zuiderveen, S. (2013). Efficient targeting of homelessness prevention services for families. *American journal of public health*, 103(S2), S324–S330. Retrieved from https://ajph.aphapublications.org/doi/pdfplus/10.2105/AJPH.2013.301468.

20 Greer, A. L., Shinn, M., Kwon, J., & Zuiderveen, S. (2016). Targeting services to individuals most likely to enter shelter: Evaluating the efficiency of homelessness prevention. *Social Service Review*, 90(1), 130–155. Retrieved from https://www.journals.uchicago.edu/doi/abs/10.1086/686466.

In order to weight these risk factors, Shinn *et al*. and Greer *et al.* used statistical models called Cox proportional hazards models to determine which risk factors increase or decrease the risk of becoming homeless (*i.e.*, entering a shelter) for individuals and families over time. In the screening tools developed from these models, they assigned one to six points to each risk factor based on how strongly each factor was correlated with risk of future homelessness. Tables 2 and 3 list the point values that Shinn and Greer assigned to each risk factor on the family and individual tools. (The screening tools themselves are not publicly available, but based on the risk factors listed below, it appears that neither the adult nor the family version of the tool is over 15 questions long.)

TABLE 2. HomeBase Family Tool Scoring Guidelines

POINTS	RISK FACTORS
1	Pregnancy, child under 2, no high school GED, not employed, not a leaseholder, reintegrating, 1–3 moves in the past year, 1–2 disruptive experiences, moderate discord and between the ages of 23–28 years old.
2	Eviction, receiving public assistance, 4 or more moves, 3 or more disruptive experiences, severe discord
3	Shelter experience as an adult

TABLE 3. HomeBase Individual Tool Scoring Guidelines

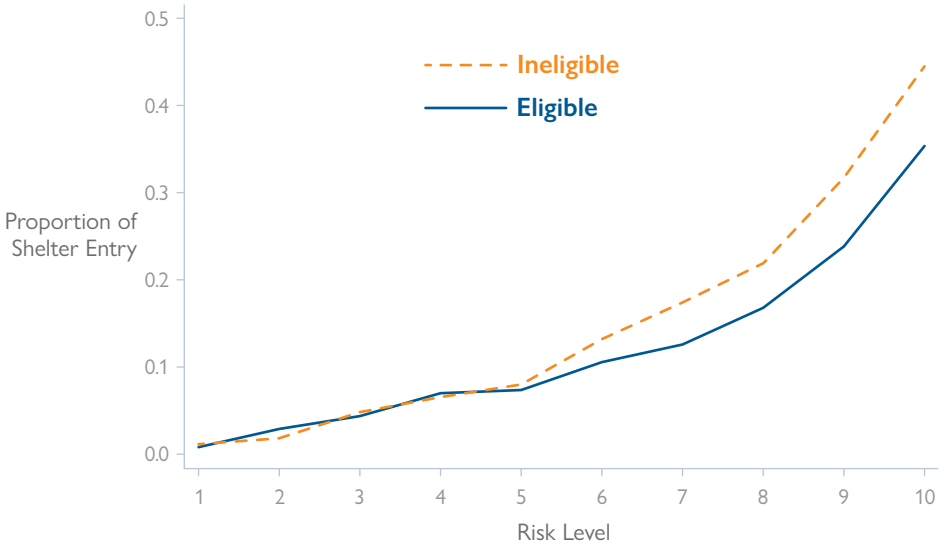
POINTS	VARIABLES
1	Reintegrating into community from shelter, jail, or treatment program; Currently receiving public assistance; Age (29–32 years old); Rental arrears (amounting $5,000–$8,000)
2	Reports being asked to leave by landlord or leaseholder; Reports applying for shelter in the last 3 months; Age (28 or younger); Rental arrears (amounting $8,000 or greater)
3	Has administrative record of previous shelter stay

Shinn *et al.* compared the families that the model identified as being at the greatest risk of homelessness with the families that HomeBase program staff judged to be eligible for the program. As compared to program staff judgment, the Shinn *et al.* model had substantially higher precision (*i.e.*, correctly predicting shelter entry) while producing the same level of false alarms (*i.e.*, families that did not enter shelters in the absence of prevention services). Greer et al. created a similar model for individuals at risk of homelessness for HomeBase. Greer *et al.* found that their model increased correct predictions by 77% (the model correctly predicted over 90% of shelter entry) and reduced missed cases of future homelessness by 85%. Both studies of individuals and of families suggest

that following applicants for at least a year is useful, as the majority of shelter entries happened within a year of applying for prevention services.

Shinn *et al.* and Greer et al. found no evidence that some individuals or families were too risky to be helped. In fact, the higher the risk of homelessness, the greater the impact of receiving prevention services. Rates of shelter entry for lower risk clients (in risk deciles 1 through 5) were no lower for those who received services than for those who did not. Services did matter for families in the top half of the risk distribution. The spread between rates of shelter entry for eligible and ineligible families increased with risk decile (Figure 2). **No level of risk was too high for families to benefit from services.**

FIGURE 2. Proportion of HomeBase family applicants entering shelter by risk level and eligibility (n = 11,044), excluding families with eligibility pending: New York City; October 1, 2004–June 30, 2008.



Source: Shinn et al. (2013)

Table 4 is a comparison of questions on the HomeBase family and individual screening tools with the questions on the Family and Adult PTTs. Bolded items are (near) identical criteria. Greyed out boxes are criteria not found in the PTTs. In the right column, "Family PTT" in brackets means that the question only appears on the Family PTT and not the Adult PTT.

TABLE 4. HomeBase and PTT Item Comparison

HOMEBASE FAMILY AND INDIVIDUAL SCREENING TOOL ITEM	FAMILY AND ADULT PTT SCREENING TOOL ITEM
Pregnancy Child aged <2 y	Dependent under 6 [Family PTT]
No high school or GED	
Not currently employed	Within past 60 days, Loss of income, employment or benefits or increase in expenses
Not leaseholder	
Reintegrating from shelter, jail or treatment program	**Within 6 months, any household member discharged from jail, hospital, prison, or treatment program**
Currently receiving public assistance (TANF, SNAP or "One-Shot" assistance)	Received homeless rental assistance in LA County (Permanent Supportive Housing, Housing Choice Vouchers, or Rapid Rehousing)
Involvement with protective services	**Involvement with Adult or Child Protective Services**
Reports being evicted or asked to leave by landlord or leaseholder	**Unlawful detainer, 3-day, or 30-day notice**
Reports applying for shelter in past 3 months	History of actual, literal homeless in past 3 years
Reports having been in shelter as an adult	History of actual, literal homeless in past 3 years
Age, y **23–28** **≤22**	**Head of Household under the age of 25 [Family PTT]**
Moves in past year 1–3 ≥4	Any household member experienced >3 moves in one year during childhood (childhood housing disruption) or experienced homelessness, foster care placement, immigrated to the US or eviction (childhood adversity)
Disruptive experiences in childhood 1–2 ≥3	
Discord with landlord, leaseholder, or within household	

Prevention/Re-Housing Vulnerability Index-Service Prioritization Decision Assistance Tool (PR-VI-SPDAT): Homelessness prevention providers in Santa Clara County, Kansas City, Texas City, and the City of Colorado Springs currently use the PR-VI-SPDAT to determine eligibility for prevention. OrgCode, a consulting company focused on developing assessment tools for the human services sector, developed the PR-VI-SPDAT. Prior to the creation of the PR-VI-SPDAT, OrgCode produced the Vulnerability Index-Service Prioritization Decision Assistance Tool (VI-SPDAT) for agencies working with people experiencing homelessness to determine service priority groups. In 2016, OrgCode released the first version of the PR-VI-SPDAT that is specifically designed as an assessment tool for triaging homelessness prevention participants.

The PR-VI-SPDAT has a 47-question family version[21] and a 35-question single adult version.[22] The questions cover the following categories of homelessness risk factors: safety, long-term housing stability, meaningful daily activity, self-care and daily living skills, interactions with emergency services, wellness, and family stabilization considerations. We were unable to find any publicly available information on how OrgCode determined the factors to include on the PR-VI-SPDAT.

Participants scoring above 22 on the PR-VI-SPDAT are highly recommended for eligibility for financial and case management support. Participants scoring below 10 are ineligible. However, service providers can use the scoring recommendation at their own discretion. For instance, in Santa Clara County, participants with a score above 13 are eligible for financial assistance, while those with a score below 8 are ineligible for financial assistance.

The PR-VI-SPDAT includes recommended scripts for every section. It also incorporates simple words and phrases in an effort to make it more understandable for participants. For instance, in the Long Term Housing Stability section, a question asks *"Do you have any legal stuff going on right now that may result in them being locked up, having to pay fines, or that make it more difficult to stay housed?"* The phrase "legal stuff" is used in a casual context and further explained with concrete examples. Unlike other screening tools, the PR-VI-SPDAT prompts participants to answer "yes," "no," or "refused."

We were unable to locate any research validating the PR-VI-SPDAT or otherwise evaluating the PR-VI-SPDAT.

21 A family version of the PR-VI-SPDAT is available at: https://d3n8a8pro7vhmx.cloudfront.net/beehivegroupcadev/pages/1208/attachments/original/1478804849/PR-VI-SPDAT-v1-Family_Canadian.pdf?1478804849

22 A single adult version of the PR-VI-SPDAT is available at: https://wnyhomeless.org/app/uploads/PR-VI-SPDAT-for-Singles_v1_American-1.pdf

Other Prevention Targeting Tools: In our literature review, we located a few other homelessness prevention screening tools, but there is little background information on how these tools were developed and no evaluations of these tools. A Homelessness Prevention and Rapid Re-housing Program (HPRP) in Lancaster County utilizes the HPRP Homeless Prevention Assessment Worksheet. The tool includes open-ended questions such as *"What is your recent traumatic life event that has led to this crisis [homelessness]?"* as well as yes/no questions that are aimed at capturing risk of homelessness.

A homelessness prevention screening tool developed by the Champaign County, Illinois Office of Mental Health-Homeless Action Committee[23] consists of 17 questions that cover topics similar to those on the PTT (*e.g.*, housing status, prior homelessness episodes, criminal justice involvement, recent exits from an institution).

A VA Supportive Services for Veteran Families (SSVF) homelessness prevention program uses a targeting tool to determine eligibility for homelessness prevention services. The targeting tool consists of 17 questions that cover topics very similar to those included in the PTTs (*i.e.*, housing status and imminent loss of housing; vulnerabilities and housing barriers — including gross income, significant loss in income, eviction history, registered sex offender, history of literal homelessness; and local policy priorities).[24]

23 The tool developed by the Champaign County Office of Mental Health-Homeless Action Committee is available here: https://ccrpc.org/wp-content/uploads/2015/02/rent-assistance-homeless-prevention.pdf

24 The SSVF tool is available here: https://www.va.gov/HOMELESS/ssvf/docs/SSVF_Homelessness_Prevention_Screening_Toolkit_v2_Website.pdf

III. Methodology and Results

A. Research Question 1: Are there homelessness risk factors that are not currently captured on the PTTs that could be added to the PTTs to potentially improve their ability to predict future homelessness?

We answered this research question in two steps.[25] In the first step, we used linked administrative data to identify 100 risk factors that could be captured by PTT questions. The administrative data that we used for this analysis was data from the Enterprise Linkage Project (ELP), which contains linked service utilization data from several Los Angeles County agencies, including the Department of Health Services (DHS), the Department of Mental Health (DMH), the Department of Public Health (DPH; restricted to the Substance Abuse Prevention and Control program), the Department of Public and Social Services, the Los Angeles County Sheriff, Probation, and the Department of Children and Family Services (DCFS). We transformed prior service history data on individuals and families in the ELP into potential risk factors — for example, how recently services had been applied for at various Los Angeles County agencies, length of stays at county institutions such as hospitals and jails, and prevalence of various medical diagnosis codes. There were 711 potential risk factors for families and 688 potential risk factors for adults. We then created statistical models to determine which 100 risk factors were the most predictive of future homelessness.[26]

In a second step, we explored whether the top 100 risk factors captured in administrative data could have improved the ability of the PTT to predict future homelessness. For families and individuals who are in the ELP data and who also completed the PTT, we translated their ELP service records into the same top 100 risk factors we identified in the first part of our analysis described above. We then created statistical models that used individuals' and families' actual PTT score along with each of the top 100 predictive risk factors to predict risk of future homelessness. Because we had very limited data on the TAY PTTs, we did not perform any analyses using TAY PTT data.

25 A more detailed description of the data and methodology used in our Research Question 1 analysis is available in Appendix C: Research Question 1 (New PTT Questions).

26 Accessing a homeless shelter or street outreach services, as reflected in the Homeless Management Information System (HMIS), served as a proxy for a homelessness outcome in our Research Question 1 analysis. The HMIS is a local information technology system used to collect participant-level data and data on the provision of housing and services to individuals and families experiencing homeless or at risk of homelessness. The HMIS data held by the California Policy Lab comes from the Los Angeles Homeless Services Authority (LAHSA). The functional range of data used in the analysis described in this section is January 2010 to September 2019.

Through our analysis and considerations of which risk factors could contribute to the PTT, we identified two new potential questions. To identify these risk factors, we searched for those that satisfied the following requirements: (1) making a statistical contribution beyond the PTT score on predicting homelessness, (2) not being duplicative of existing PTT items, and (3) having an interpretable meaning if the risk factor was turned into a question. Only two risk factors met these three requirements, and they are included, along with new potential PTT questions, in Table 5.

TABLE 5. Converting Important risk factors into Potential New PTT Questions.

RISK FACTOR	POTENTIAL NEW PTT QUESTION
Recency of DHS emergency room visit	[Families]: Within the last six months, has anyone in your household gone to a hospital emergency room for medical care? [Individuals/TAY]: Within the last six months, have you gone to a hospital emergency room for medical care?
Uninsured Department of Health Services visit in the last six months	[Families]: Does anyone in your household lack health insurance? [Individuals/TAY]: Do you lack health insurance?

Although we used county service utilization data from the ELP in conjunction with PTT data to predict homelessness in this analysis, it would not be possible for service providers to use county service utilization data when they are actually administering the PTT because they do not have access to linked county service utilization data. Therefore, these risk factors would be captured by asking the additional questions noted in Table 5.

We recommend that LAHSA add these two PTT questions to the Family, Adult, and TAY PTTs. For the first year or so, responses to these questions would be collected, but the weights for the questions would be zero. Once we collect data on these two new PTT questions, we can determine appropriate weights for these questions based on their predictive power relative to other PTT questions (using the methodology detailed below under our Research Question 4 analysis).

As noted above, because we had very limited data on TAY PTTs, we did not perform any analyses using TAY PTT data. Nonetheless, we recommend piloting the two new potential PTT questions in the TAY PTT as well because the identified risk factors may be important risk factors for the TAY population.

B. Research Question 2: How can the wording and structure of the PTTs be improved to maximize the validity of responses?

Methodology

In order to answer Research Questions 2 and 3, we conducted interviews with prevention services providers and individuals who had either received prevention services or who had lived expertise in homelessness. We interviewed 19 service providers and 9 lived experts between January 15, 2021 and May 11, 2021. Our recruitment was purposefully conducted to represent service providers and lived experts across the single adult, family, and TAY populations. We asked LAHSA for recommendations for service providers to interview and then recruited additional service providers by asking responding providers for more recommendations. Participating service providers then assisted us in recruiting individuals who had either received prevention services or who had lived experience of homelessness by disseminating recruitment flyers to their organizations' homelessness prevention departments and through websites, social media outlets, and newsletters. We also shared recruitment material with LAHSA who shared the materials with their lived expert advisory boards. In addition, we invited individuals with lived expertise who applied to our Homelessness Prevention Community Advisory Board (CAB)[27] to participate in the interviews. Although we tried to recruit Spanish-speaking individuals by sharing Spanish-language recruitment materials with service providers who serve Spanish-only speakers, we were unsuccessful.

All interviews were conducted via Zoom phone call. The interview proceeded as follows: First, the interviewer provided a brief introduction to the study and explained how the interview would be conducted. Next, the interviewer addressed interview logistics, such as the duration of the interview (approximately one hour), the $50 gift card they would receive for participating, their rights as a participant, and confidentiality. The interviewer then received oral consent to record the interview. The substantive part of the interview began with brief rapport-building questions (*e.g.*, about interviewee background and experience in homelessness prevention), followed by general PTT administration questions, followed by questions about each PTT item. Interviews were recorded to aid the note-taking process and analysis.

27 Our CAB is not specific to this PTT improvement project. The CAB represents a formal channel for individuals experiencing or at-risk of homelessness, service providers, and other community stakeholders to have a direct impact on our homelessness prevention work generally.

To improve the wording of PTT items, we asked interviewees "cognitive interview" questions about each PTT item. The theory behind cognitive interviewing is that if questions on a survey or questionnaire are not structured with the target population in mind, sensitive information may be less likely to be reported by respondents or there may be reporting errors due to simple confusion of terms.

The current PTTs are phrased as checklist items rather than questions, *e.g.* "At least one dependent child under age 6" rather than "Are there any children in your household under the age of 6?" (*see* Appendix A: Current Versions of Family, Adult, and Transition-Age Youth PTTs). Service providers report that they rephrase the checklist items as questions when they administer the PTTs to participants. Before conducting cognitive interviews about PTT questions, we first converted PTT items into questions (but kept the original wording of the PTT items largely intact) so that interviewees could respond to a uniform set of PTT questions.

One primary change that we made when transforming PTT items into questions was breaking up compound items into separate questions. For example, we converted the PTT item on mental or physical disability into two separate questions, one for mental disability and one for physical disability. For PTT items that captured complex concepts like criminal justice involvement, we included shorter, simpler questions about parole/probation, arrest, and conviction. Creating shorter, less complex questions serves two purposes. First, shorter questions are easier to understand. Second, by breaking items down into separate risk components (e.g., physical disability, mental disability), we can capture data on each risk component separately to improve future PTT validation and reweighting efforts. After converting PTT items into questions, we conducted cognitive interviews to explore issues such as sensitivity/acceptability, comprehension, recall, and relevance.[28] This process is illustrated in Table 6.

28 Adair, C. E., Holland, A. C., Patterson, M. L., Mason, K. S., Goering, P. N., Hwang, S. W., & Home, A. (2012). Cognitive interviewing methods for questionnaire pre-testing in homeless people with mental disorders. *Journal of Urban Health*, 89(1), 36–52.

TABLE 6. Example of PTT Item, PTT Question, and Cognitive Interview Questions

Current PTT Item	PTT Item Converted into PTT Questions	Cognitive Interview Questions about PTT Questions for Service Provider
Adult has a disability (i.e., a physical or mental impairment that substantially limits one or more major life activities; has a record of such impairment; or is regarded as having such an impairment)	Do you have a physical disability (i.e., Do you have a physical impairment that substantially limits one or more major life activities; do you have a record of such impairment; or are you regarded as having such an impairment)? Do you have a mental disability (i.e., Do you have a mental impairment that substantially limits one or more major life activities; do you have a record of such impairment; or are you regarded as having such an impairment)?	Do you think participants would understand what the terms physical disability and physical impairment mean in this question? How do you typically explain the terms physical disability and physical impairment to participants? Is this question particularly sensitive? If so, why? Do you think participants would understand what the terms mental disability and mental impairment mean in this question? How do you typically explain the terms mental disability and mental impairment to participants? Is this question particularly sensitive? If so, why?

We also included the two additional PTT questions that resulted from the Research Question 1 analysis in the cognitive interviews: (1) Within the last six months, have you/has a member of your household gone to a hospital emergency room for medical care? (2) Do you/Does any member of your household lack health insurance? Interviews were semi-structured, providing leeway for interviewees to provide any feedback that was not specifically addressed in interview questions. Interviewers coded themes in interview transcription and notes and the interview team met weekly to discuss themes that emerged from interviews.

Results

The interview team identified the following major themes related to question wording:

- **Sensitive questions:** Certain PTT questions are particularly sensitive, *e.g.*, questions about mental health, physical disability, and sex offender status. Providers noted that when asking sensitive questions, they reiterate that none of the participants' responses will be held against them and politely ask the participant to be honest.
- **Confusing terms:** Certain terms like "doubled up" and "transitional housing" are confusing. Providers noted that a guide that defines confusing terms would be useful. We asked service providers to tell us how they have defined these confusing terms for participants, and we drafted some simple definitions for confusing terms based on provider feedback (*see* Appendix E: Draft PTT Glossary).

- **Difficulty recalling how many times something happened (e.g., instances of homelessness, eviction):** Answering questions about the number of times something happened can be difficult. It's easier for example, for people to say whether they have never been evicted, have been evicted once, or have been evicted more than once rather than saying specifically how many times they've ever been evicted.

The interview team identified the following major themes related to **PTT structure**:

- **Group questions by theme:** Service providers recommended that questions be grouped by theme. For instance, the proposed new question that states "Does anyone in your household lack health insurance?" could be placed near a question on extended hospital stays. Grouping questions by topic makes the administration process easier and more conversational.
- **Place sensitive questions towards the end of the PTT when possible:** Service providers noted that sensitive questions should be placed towards the end of the PTT when possible so that service providers have an opportunity to build rapport before they discuss sensitive topics. Literature on survey best practices also recommends putting sensitive questions at the end of surveys.[29]

Recommendations

The recommendations that we developed based on these interviews is detailed in the following appendices:

- **Revised Family, Adult, and Transition-Age Youth PTTs (Appendix B):** These revised PTTs incorporate the feedback we received about question rewording and restructuring. (These revised PTTs also include the additional PTT questions we recommend under Research Question 1 above and the new question weights and score thresholds we recommend under Research Question 4 below.)
- **Draft PTT Glossary (Appendix E):** This document includes simple definitions for confusing terms on the PTT (these definitions are based on feedback we received from providers on how they explain difficult terms to participants).

In addition, Appendix D includes a **Summary of PTT Question Rewording Feedback and Recommendations**. This spreadsheet (1) lists each original PTT item and (2) the PTT question that each item was converted into. The spreadsheet also (3) summarizes feedback we received on each specific PTT

29 *See, e.g.*, Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. Psychological bulletin, 133(5), 859.

question, (4) provides recommendations on how to reword the questions to make them easier to understand and to address issues such as sensitive subject matter, and (5) provides a specific recommendation for how each question should be worded.

C. Research Question 3: What improvements can be made in the PTT administration process in order to more accurately capture information on at-risk individuals and families?

Methodology

During the interviews described under Section III.B above, we also explored screening tool administration best practices and challenges to develop recommendations for improving administration. We discussed, for example, whether service providers believe the PTTs are easy to use and what training staff receive before administering the PTTs. We also investigated what procedures exist or should be created to foster trust between the staff administering the PTTs and the individuals and families responding to PTTs. As noted above, interviewers coded themes in interview transcription and notes and the interview team met weekly to discuss themes that emerged from interviews.

Results

The interview team identified the following major themes related to PTT administration:

1. **Inconsistent practices across providers:** There are inconsistent PTT administration practices across providers. Some providers administer the PTT in paper format, others input directly into Clarity/HMIS. There are varying approaches to explaining eviction and other key concepts.
2. **Training/guidance on administering the PTT:** Providers think more training on administering the PTT would be beneficial. Some providers noted that they had no PTT training and learned through trial and error. Providers also noted that staff turnover creates gaps in experience and training.
3. **Importance of building rapport:** Providers noted that participants feel more comfortable answering sensitive questions when: providers ensure that the PTT is administered in a private area, providers explain why questions are being asked, the PTT is administered in a conversational manner, and providers respond to non-verbal cues (*e.g.*, using comforting words to soothe participants who appear anxious).

4. **Providers are unaware that the PTT is available in multiple languages:** Many providers use the English version of the PTT for all participants and translate in real time if a participant is non-English speaking.
5. **Training/guidance on the eviction process:** Providers have varying approaches to defining and explaining the eviction process and noted that they would benefit from uniform definitions. Most providers have limited understanding of the eviction process and are forced to do independent research.
6. **Participants need visuals to understand the eviction process:** Participants have difficulty understanding where they are in the eviction process. Providers noted that having visual materials would be helpful in explaining eviction proceedings during the housing status portion of the PTTs.
7. **Hesitancy to answer questions can be a barrier to receiving services:** Providers and participants agree that participants can be hesitant to answer certain questions because the question is about a sensitive topic or because they are afraid that answering the question a certain way will prevent them from getting assistance. Perceived confidentiality and privacy of the data collection setting influence responses to sensitive questions.
8. **Participants may have a difficult time recalling the specific number of times events like eviction or homelessness happened and have particular difficulty estimating the duration of events like homeless spells.**

Recommendations

We asked service providers about how they addressed the challenges detailed above. We also reviewed literature on administering sensitive surveys. Our recommendations for improving PTT administration — detailed in Table 7 — are based on provider feedback and relevant literature.

TABLE 7. PTT Administration Process Recommendations

	FEEDBACK	RECOMMENDATION
Centralization	1. Inconsistent practices across providers	Centralize PTT administration to ensure that PTT responses are captured in a uniform manner. This will ensure that risk is more accurately and uniformly assessed for each participant. This will also allow future PTT improvement efforts to rely on uniformly collected data.
Training	2. Training/guidance on administering the PTT	Provide standardized introductory training on administering the PTT.
	3. Building rapport	During PTT administration training, provide training on establishing rapport. Training can include instruction on body language, tone, wording, and listening skills.[30] Providers recommended conducting the PTT over the Zoom platform during the pandemic to check for participant understanding, to ensure privacy, and to build rapport. Recommendations for creating a comfortable environment and building rapport are included in Appendix F: PTT Administration Best Practices and Sample Scripts.
	4. Training/guidance on eviction process	Partner with a legal service provider to offer standardized training on the eviction process.
Support Documents	5. Providers unaware of PTT in multiple languages	Make sure providers are aware that the PTT is available in multiple languages in the LAHSA document library (Potentially during PTT administration training).
	6. Visuals to understand eviction process	Provide a standard eviction process diagram to assist providers in administering the housing status questions on the PTT. (Some providers are already using various eviction diagrams provided by their legal services partners.)
Survey Administration	7. Overcoming hesitancy to answer questions; perceived confidentiality and privacy	A short notice at the beginning of the survey about the confidentiality of participant responses can make participants feel more comfortable answering sensitive questions. Throughout the PTT, provide assurances of confidentiality and remind people of their right to refuse to respond. However, note that elaborate assurances can backfire and raise suspicion, so assurances should be short and to the point.[31] Also, explain the purpose of sensitive questions. See Appendix E: PTT Administration Best Practices and Sample Scripts. Providers should ensure that there is some level of privacy when the PTT is administered, especially from third parties that the participant may feel judgment from (e.g., parents or children) or that the participant believes they will see again (e.g., co-inhabitants). Providers noted that face-to-face administration increases comfort level and accuracy of responses. As noted above, providers recommended conducting the PTT over the Zoom platform during the pandemic to check for participant understanding, to ensure privacy, and to build rapport.
	8. Recall difficulty	If a participant has difficulty remembering how many times something happened (e.g., past instances of homelessness), providers should go through the participant's story/ timeline with them in a conversational manner and help them count the number of times the event occurred.

30 Fritsch, A., Hiler, H., Mueller, B., Wu, M., & Wustmann, J. (2017). The Vulnerability of Assessments, A Qualitative Analysis of Housing Professionals' Experiences with the VI-SPDAT in Minnesota and a Comparative Review of Alternative Housing Triage Assessments; Rice, Eric, and Angela Rosales. "TAY Triage Tool pilots report." (2015).

31 Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological bulletin*, 133(5), 859; Singer, E., Hippler, H. J., & Schwarz, N. (1992). Confidentiality assurances in surveys: Reassurance or threat?. *International journal of Public Opinion research*, 4(3), 256–268.

D. Research Question 4: Can reweighting PTT questions and removing questions from the PTTs result in shorter, more accurate screening tools?

As described below (and in more detail in Appendix G), we investigated whether existing data could be used to improve the predictive accuracy of the tools. Specifically, our goal was to understand whether changing the weights for each item or the corresponding thresholds would result in PTTs that more accurately predict which adults and families would eventually experience homelessness. As part of this analysis, we also assessed whether the available data would allow for the tools to produce generalizable risk factors for homelessness. We concluded that this was not possible for the following reasons. First, all adults and families in the sample met the first two eligibility criteria, meaning they almost certainly faced imminent loss of housing and earned 50% of the AMI or lower. Beyond that, 90% of single adults and 80% of families who took the current versions of the PTTs met the minimum threshold for receiving prevention. This means that the vast majority of the adults and families in the sample met all pre-determined risk factors for homelessness. Because so many people already met the thresholds, it shifts the research question to "among this very high risk group, which questions on the PTT help identify the very highest risk group?" To give a specific example, when 83% of the survey respondents report earning 30% of the AMI or lower, answering "yes" to that question does less to distinguish that person or family from the rest of the people who took the survey. But asking that question of a larger group of people (with more variation in their levels of income) who may be at risk of homelessness could help to better target homelessness prevention services to those most in need.

Within the context described above, we explored how to shorten and improve the accuracy of the PTT for the sample covered by the research. As further detailed below, we (1) used findings from the interviews described under Research Questions 2 and 3 above to restructure the PTTs, (2) reweighted the PTTs using a predictive modeling framework, (3) compared the predictive performance of the current PTTs against the proposed PTTs, and (4) developed recommendations for restructuring and reweighting the PTTs based on this analysis. We were able to identify an improved version of the Family PTT with simplification and reweighting that outperformed the original PTT. We were unable to identify an alternative version of the Adult PTT that provided better predictions compared to the original PTT. That said, the version with simplified questions performed just as well. There was an insufficient sample to search for or assess changes for an alternative TAY PTT using quantitative methods. However, we still recommend applying the question simplifications that are made for the other tools.

1. Using findings from the interviews described under Research Questions 2 and 3 above to restructure the PTTs

As a first step towards improving these tools, we restructured the Adult and Family PTTs based on qualitative findings as well as an assessment of item-level responses. These two analyses allowed us to consider item-level enhancements that could be incorporated in the quantitative analysis. The modifications based on the qualitative findings were as follows:

- **Past evictions and past homelessness:** Service providers and lived experts we interviewed noted that people taking the PTT had difficulty remembering the specific number of times they had been homeless or evicted. The question about how many prior rental evictions a person or household had at any time in the past was converted into a yes or no question about whether a person has been evicted two or more times. The question about how many times a person or household has been homeless in the past three years has been converted into a yes or no question about whether a person has been homeless two or more times in the past three years.
- **Income:** In the current PTTs, the income item has overlapping categories: (1) income is $0 and (2) income is less than 30% AMI. There is also a category for 31%–50% AMI. To address the overlapping categories issue and simplify the question, we combined these categories such that the income question is a single category indicating whether or not a person's income is less than 30% of AMI.
- **Sex offender:** We removed an item asking whether or not a person is required to register as a sex offender. Service providers we interviewed noted that it is a sensitive and difficult question to ask during an initial intake interview. While sex offender status represents a barrier to housing, very few people feel comfortable asking about it during the PTT. Service providers noted that if a person is required to register as a sex offender, the issue arises later in the person's relationship with the service provider and they are able to address the barrier at that point. Furthermore, as reflected in Tables 8 and 9 below, the item itself had a very low response rate, which may reflect the sensitivity of the question. Note that the low response rate also makes the item ineligible to be used in the predictive modeling process.

- **Domestic Violence:** We removed the question on the PTTs about whether a person or household is fleeing domestic violence *(Currently fleeing or attempting to flee domestic violence, dating violence, sexual assault, or other dangerous or life-threatening conditions that relate to violence against any household member)*. As service providers pointed out, a person or household fleeing domestic violence is homeless under HUD's definition[32] and should be connected with services meant for people already experiencing homelessness rather than prevention. However, we recommend adding a PTT question about domestic violence-related issues in the home so that the PTT still captures domestic-violence related homelessness risk: *Do you feel safe in your home? Are you in any way being physically, mentally or financially abused by a household member? Do you need to be hypervigilant around someone? Is someone destroying property? Is someone looking through your private belongings, such as your phone?* (This question would be weighted zero points for now because we do not have historical data on this new question. Thus we cannot estimate its predictive power via statistical modeling. Once data is collected on this question, we can assign it a weight during future PTT validation and reweighting efforts.)

We now present an exploratory assessment of item-level response rates. Data on response rates are helpful in several ways. First, we can clearly see which questions have very low response rates and thus are candidates for improved data collection or removal. Second, if a question has a very high "yes" rate among our sample population, that may mean that the question is not "predictive" for this population — meaning, it doesn't help distinguish certain adults' or families' risk. That said, they may still be important risk factors for homelessness for the general population — just not the sample available for this analysis. In Tables 8 and 9, we summarize the response rates by PTT item for the Adult PTT and the Family PTT, respectively.

32 HUD: "Homeless Definition," at https://files.hudexchange.info/resources/documents/HomelessDefinition_RecordkeepingRequirementsandCriteria.pdf.

TABLE 8. Adult PTT Number and Percent of Positive ('Yes') Responses out of 1,075, by Item

ITEM	ITEM #	# RESPONSES 'YES'	% OF RESPONSES 'YES'
Doubled up, household to vacate	1a	64	6%
Leaseholder received notice youth or adult	1b	439	41%
Fleeing Domestic Violence	1c	21	2%
Hotel out of pocket	1d	12	1%
Failed to respond to notice within 5 days	2a	39	4%
Served unlawful detainer or have a court date	2b	113	11%
Quit notice with one month rent owed	2c	749	70%
Quit notice with less than one month rent owed	2d	203	19%
30 days vacate notice	2e	70	7%
AMI less than 30%	-	892	83%
Loss of income within 60 days	4	647	60%
Two or more prior rental evictions	-	104	10%
Sex Offender	6	19	2%
Head of household homeless two or more times in the past three years	-	213	20%
Head of household experience adversity or housing disruption	8	483	45%
Involvement with APS or CPS	9	51	5%
Household trauma affects housing	10	694	65%
Discharged from institution	11	289	27%
History of crisis services enrollment through LA County	12	405	38%
History with the foster care system	13	477	44%
Participant has disability	14	678	63%
Participant age 55 or older	15	439	41%
Housing Choice Voucher or Rent Control	16A	52	5%
Permanent Supportive Housing	16B	366	34%

The Adult PTT items with the lowest response rates were: *hotel out of pocket, sex offender*, and *fleeing domestic violence*. These low response rates reflect two distinct challenges with the current phrasing of the PTT. Specifically, the respondents are asked to only choose one of the four items under "1. Housing Status" even though more than one category may be relevant. This weakens any relationship between the relevant-yet-not-selected items — which may explain why *hotel out of pocket* is so rarely selected. The second challenge is that questions that are sensitive may have low response rates (see, for example, the low share of people responding "yes" to the sex offender item or the fleeing domestic violence item). For the latter item, the low response rate may also be explained by the qualitative finding that those fleeing domestic violence should be categorized homeless (per HUD rules) and are likely referred to homeless services rather than screened for prevention services. Thus, people who would theoretically respond "yes" to the *fleeing domestic violence item* would be unlikely to take the PTT to begin with.

The item with the highest response rate (83%) for the Adult PTT is *AMI less than 30%*. This could largely reflect that only those with low AMI are given the PTT, so it becomes less of a differentiating factor within the population.

TABLE 9. Family PTT Number and Percent of Positive ('Yes') Responses out of 1,231, by Item

ITEM	ITEM #	# RESPONSES 'YES'	% OF RESPONSES 'YES'
Doubled up, household to vacate	1a	234	19%
Leaseholder received notice	1b	333	27%
Fleeing Domestic Violence	1c	0	0%
Hotel out of pocket	1d	67	5%
Failed to respond to notice within 5 days	2a	75	6%
Served unlawful detainer or have a court date	2b	104	8%
Quit notice with one month rent owed	2c	670	54%
Quit notice with less than one month rent owed	2d	233	19%
30 days vacate notice	2e	203	16%
AMI less than 30%	-	930	76%
Loss of income within past 60 days	4	840	68%
Two or more prior rental evictions	-	59	5%
Sex Offender	6	7	1%
Single parent	7	916	74%
Child under six	8	636	52%
Head of household under age 25	9	80	6%
Household of 5 persons or larger that cannot be housed in less than 3 bedrooms	10	1	0%
Head of household homeless two or more times in the past three years	-	175	14%
Head of household experience adversity or housing disruption	12	686	56%
Protective services involvement	13	105	9%
Household trauma affects housing	14	591	48%
Discharged from institution	15	193	16%
History of crisis services enrollment through LA County	16	249	20%
History with the foster care system	17	239	19%
Participant has disability	18	354	29%
Housing Choice Voucher	19A	173	14%
Permanent Supportive Housing	19B	230	19%

For the Family PTT, we found similar patterns: the items with the lowest response rates include *hotel out of pocket, fleeing domestic violence,* and *sex offender*. For the Family PTT, *household of 5 persons or larger that cannot be housed in less than 3 bedrooms* and *two or more prior rental evictions* also had low response rates. The same reasons that may influence low response rates for the Adult PTT apply here.

Similar to the Adult PTT, note that at 76%, the item with the highest response rate for the Family PTT is AMI less than 30%. Again, this could largely reflect that only those with incomes below the AMI are given the PTT, so it becomes less of a differentiating factor within the population.

2. Reweighting the PTTs using a predictive modeling framework

Data

The data used in our predictive modeling is a sample of adult and family responses to the most recent versions of the PTTs. The data consists of Adult PTT responses from 1,075 individuals who were administered the PTT between August 1, 2018 and October 1, 2019 and Family PTT responses from 1,231 families between May 13, 2016 and October 1, 2019. Of the 1,075 individuals who took the PTT, 972 (90%) met the score threshold to receive prevention services. Of the 1,231 families who took the PTT, 982 (80%) met the score threshold. Demographic, employment, and veteran status of the samples are summarized in Table 10.

TABLE 10. Demographics, Employment, Veteran Status of Study Sample

	ADULT PTT SAMPLE (N=1,075)	FAMILY PTT SAMPLE (N=1,231 FAMILIES)
Gender		
% Male	50%	12%
% Female	50%	88%
Race/Ethnicity		
% Black	58%	48%
% Hispanic	23%	42%
% White	15%	6%
% Unemployed	67%	49%
% Veterans	9%	3%
Mean Age	51	38

Note: Other categories of race and ethnicity defined in the HMIS PTT data are not included due to small sample sizes

The outcome we focus on is whether or not a person became homeless within one year of taking the PTT. To construct this, we define becoming homeless as an enrollment in a non-prevention program in HMIS within one year of the PTT assessment date. Non-prevention enrollments are all HMIS enrollments other than the prevention enrollment.

Because we only had data for 19 TAY PTT respondents, we did not develop predictive models to reweight the TAY PTT. The Family and Individual PTT data was merged with HMIS service data to identify whether or not a participant became homeless within one year of completing the PTT.

Methodology

Predictive modeling is a quantitative framework that uses information on a person to predict a future outcome as accurately as possible. For this study, we created models that established relationships between PTT responses and homelessness outcomes that maximized accuracy, where accuracy was measured by how often the model made correct predictions. Because we could interpret the current PTT as also making predictions (*i.e.*, those with scores above the established threshold will become homeless), we could make direct comparisons between the current PTT and those created through predictive modeling strategies. Predictive modeling allows for a reweighting of items and a fine-tuning of threshold to maximize model accuracy.[33] A detailed description of how we implemented this modeling can be found in Appendix G.

33 Note that the reweighting can lead to some items being given a weight of zero if they do not have a strong empirical relationship with the outcome. However, we maintained a weight of 1 for these items in order to keep them in the model. We did this because based on the qualitative findings, we believe it is premature to stop the collection of data on certain items before new survey strategies are implemented.

3. Comparing the predictive performance of the current PTTs against the proposed PTTs

The advantage of predictive modeling over other types of analyses is we can evaluate the performance of the predictive model using data held-out from the model building procedure. The performance of a predictive model can be evaluated by comparing predictive performance metrics against a baseline model which, in this case, is the PTT currently in use. We are interested in three metrics:

- **Precision** is the percent of participants who are predicted to experience homelessness who actually experience homelessness.
- **Recall** is the percent of people who experienced homelessness who were correctly predicted to experience homelessness.
- **F1-score** is a summary statistic that combines precision and recall.

Precision and recall, individually, are not informative. For example, the model can have a perfect precision score if it predicts only one person will become homeless and that person becomes homeless. Such a model would be overly selective, but the precision metric alone wouldn't reveal that. On the other hand, recall can be maximized if the model predicted that everyone would become homeless, even if only a subset of those persons eventually became homeless. Precision and recall, in combination, are useful because they capture the behavior of the model and help us understand if the model is too selective or not selective enough. For example, a model may have high precision and low recall if it accurately predicts very few people will experience homelessness even when many people experience it. Alternatively, a model may have low precision and high recall if it predicts every person will experience homelessness when only a few actually do. Making a policy decision based on the trade-offs of precision and recall is largely guided by the consequences of making an incorrect prediction. If the consequence of incorrectly predicting someone will become homeless is low, then having a low precision score but a high recall score is preferred. Alternatively, if the consequence of incorrectly predicting someone will become homeless is very high, then precision should be favored. When trying to balance both, the F1-Score is preferred because it provides a summary of both measures.

To assess the new PTTs against the current PTT, we compared measures of the three performance metrics applied to the different tools. Again, the proposed PTTs all included a simplification of questions based on the qualitative findings, and they sometimes also included results from the predictive modeling — if the results of the modeling exercise resulted in new PTTs that performed better than the current PTT. The results of these comparisons are provided below and further technical details are provided in Appendix G: Research Question 4 (PTT Reweighting).

Family PTT

The proposed Family PTT is based on both simplifications and predictive modeling, and it has better measures of accuracy compared to the current PTT. The precision of the proposed PTT increased from 0.149 to 0.287, a 93% increase. The increased precision means when someone scores above the threshold for the proposed PTT they are two times more likely to become homeless compared to persons scoring above the threshold for the original PTT. At the same time, the recall score decreased from 0.696 to 0.482, a 31% decrease. The drop in recall means that of all clients who become homeless a fewer number will score above the decision threshold on the proposed PTT, compared to the original PTT. The increase in precision but drop in recall can be interpreted as the proposed tool being more selective with who it predicts will become homeless, which means persons who score above the threshold are more likely to become homeless but fewer persons will score above the threshold. We can summarize the trade-off between precision and recall using the F1-score, the F1-score is 1.5 times greater than the F1-score of the current PTT, which implies a general improvement when balancing both precision and recall.

The optimal eligibility threshold for the proposed Family PTT (*i.e.*, the threshold that maximizes the F1-score) increased from 21 to 24, which means that if a participant scores 24 or above they should receive prevention services. The threshold, nonetheless, is not a fixed quantity and can be changed given program vacancies or constrained program supply. However, note that changing the threshold will entail tradeoffs. For example, if the threshold is lowered to 14 from 24, then the precision of the tool will decrease, slightly, while the recall will go up, rapidly. In other words, the model will recommend more participants for treatment but lose precision in doing so. From a practical perspective, lowering the threshold could be done if the program can be given to more participants and there is no consequence of incorrectly predicting that a person will become homeless. On the other hand, if capacity is reduced, raising the threshold would result in fewer people receiving services. Raising the threshold, however, should be done if there are too many applicants, not enough slots in the program, and the consequence of incorrectly predicting a person will not experience homelessness is small.

Adult PTT

The proposed Adult PTT is based on simplifications only, and it performs substantively similar to the current PTT. The precision of the proposed PTT increased slightly from 0.136 to 0.143, and the recall increased slightly from 0.638 to 0.702. The similar precision score means when someone scores above the threshold for the proposed PTT, they are just as likely to become homeless compared to the original PTT. Likewise, the minor increase in recall means that, for both the original and proposed PTTs, the number of persons — who became homeless — that score above the threshold is similar. Combining these two measures the F1-score improves slightly from 0.224 to 0.246. These improvements are not large in magnitude and imply that the restructured Adult PTT performs similarly to the existing Adult PTT, but that the improvements to question design can improve data collection going forward.

The optimal eligibility threshold for the proposed Adult PTT (*i.e.*, the threshold that maximizes the F1-score) decreased from 19 to 16, which means that if a participant scores 16 or above, they should receive prevention. As with the Family PTT, the threshold is not a fixed quantity and can be changed given program vacancies or constrained program supply.

4. Developing recommendations for restructuring and reweighting the PTTs based on this analysis

We recommend implementing the proposed Family and Adult PTTs in place of the current PTTs. For the Family PTT, the simplified and reweighted PTT had meaningfully better measures of precision compared to the current PTT. For the Adult PTT, even though the simplified PTT had similar measures of precision compared to the current PTT, we believe it will lead to improved data collection in terms of both making the tool easier to administer and the accuracy of data collected. Recommended weights for the Family and Adult PTTs are below.

Family PTT

Following the procedure outlined in the *Data and Methodology* section, the model puts the most weight on: *doubled up, household to vacate; head of household homeless two or more times in the past 3 years; failed to respond to notice within 5 days, served unlawful detainer or have court date,* and *quit notice with one month rent owed*. Otherwise, the weight is relatively evenly spread across the remaining items. The heavily-weighted items should not be interpreted as generalizable risk factors for homelessness. Instead, these are items that help distinguish very high-risk families among the sample population of high-risk families who met the eligibility criteria for the program.

TABLE 11. Proposed Weights for Family PTT Questions

ITEM	ITEM #	WEIGHT
Doubled up, household to vacate	1a	16
Leaseholder received notice	1b	1
Hotel out of pocket	1c	1
Failed to respond to notice within 5 days	2a	10
Served unlawful detainer or have a court date	2b	8
Quit notice with one month rent owed	2c	6
Quit notice with less than one month rent owed	2d	4
30 days vacate notice	2e	2
Income is less than or equal to 30% AMI	3	1
Loss of income within 60 days	4	1
Two or more prior rental evictions	5	1
Single parent	6	3
Child under six	7	2
Head of Household under age 25	8	1
Household of 5 persons or larger than cannot be housed in less than 3 bedrooms	9	1
Head of household homeless two or more times in past 3 years	10	12
Head of household experienced adversity or housing disruption	11	1
Protective services involvement	12	4
Household trauma affects housing	13	1
Discharged from institution	14	4
History of crisis services enrollment through LA County	15	1
History with the foster care system	16	1
Participant has disability	17	3
Housing Choice Voucher	18a	1
Permanent Supportive Housing	18b	4
Visited an emergency room in the last six months	19	0
Lacks health insurance	20	0
Score threshold for receiving prevention services	-	24

Adult PTT

As discussed above, the reweighted Adult PTT performed worse than the current PTT. As a result, we did not change the weights for the proposed PTT except to account for the simplification of the *income*, *homelessness experience*, and *eviction history* questions. For unchanged PTT items, we fixed the weight to be equal to the weight in the current PTT.

TABLE 12. Proposed Weights for Adult PTT Items

ITEM	ITEM #	WEIGHT
Doubled up, household to vacate	1a	5
Leaseholder received notice	1b	1
Hotel out of pocket	1c	1
Failed to respond to notice within 5 days	2a	5
Served unlawful detainer or have a court date	2b	4
Quit notice with one month rent owed	2c	3
Quit notice with less than one month rent owed	2d	2
30 days vacate notice	2e	1
Income is less than or equal to 30% AMI	3	1
Loss of income within 60 days	4	3
Two or more prior rental evictions	5	1
Head of household homeless two or more times in past 3 years	6	1
Head of household experienced adversity or housing disruption	7	2
Involvement with APS or CPS	8	2
Household trauma affects housing	9	3
Discharged from institution	10	3
History of crisis services enrollment through LA County	11	5
History with the foster care system	12	4
Participant has disability	13	3
Participant age 55 or older	14	3
Housing Choice Voucher	15a	3
Permanent Supportive Housing	15b	5
Visited an emergency room in the past six months	16	0
Lacks health insurance	20	0
Score threshold for receiving prevention services	-	16

TAY PTT

We had very little data on the TAY PTT (in our data, we observed a total of 19 TAY PTTs), so we were not able to perform any quantitative analysis of the TAY PTT. However, we recommend applying the simplifications we made for the Family and Adult PTTs to the TAY PTT. We did not have enough data to reliably generate weights for modified questions or evaluate the performance of different thresholds, so we kept the item weights from the current TAY PTT (with the exception of the simplified income, evictions, and episodes of prior homelessness items, which are weighted as they are weighted on the revised Adult PTT). Until more data is available, we recommend proxying the threshold for the TAY PTT from the Adult PTT. The Adult PTT maximum possible score is 47 and the threshold is 16. The TAY PTT has a maximum possible score of 56, so the recommended threshold for the TAY PTT would be 19. The threshold for the TAY PTT was determined by multiplying the ratio of the Adult PTT threshold to the maximum possible Adult PTT score (0.34) by the maximum TAY PTT score. The purpose is to align the TAY PTT threshold with the Adult PTT threshold relative to their different maximum scores.

Limitations, Sensitivity Analysis, and Future Improvements

Predictive modeling is dependent on the quality of the data used. Though we were able to recommend simplifications and reweighting that improved the Family PTT, our ability to improve the Adult PTT was limited by data issues. Ideally, we would have PTT data on all individuals and families who applied for prevention services. However, our interviews and data exploration indicated that the PTTs are typically administered after participants have already received some form of triaging by a service provider. Empirically, we observe this as a skewed PTT score distribution where there are fewer than expected scores below the eligibility threshold for the Adult and Family PTTs. As a result, the available data lacks generalizability to a wider population and our results may not apply to individuals who are not observed in the data. Furthermore, sensitive questions on the PTT have lower than expected response rates, and the low response rates make it challenging to utilize important questions in the predictive modeling process. As detailed in under Research Questions 2 and 3, question rewording and training on how to administer sensitive questions may improve future response rates and, as a result, modeling efforts. In addition, we recommend that a participant be able to answer "yes," "no," or "refused" to each question. Under the current response structure (*i.e.*, a single checkbox to indicate yes), it is not possible to determine whether a participant answered "no" or whether they refused to respond to the question. Being able to distinguish between whether a question is sensitive or whether the question just does not apply to a participant will be useful in future modeling efforts.

Additional challenges exist with the quantitative analysis related to the receipt of services. Specifically, most PTT respondents in our sample received prevention services, often including financial assistance, and if that aid is effective (at preventing homelessness), then this will influence the observed outcomes that the models rely on. As a result, the model may predict that a person will not become homeless even though, in the absence of aid, they will. We conducted a sensitivity analysis to address this specific issue. We tested the predictive power of our tool assuming a range of potential impacts of prevention services on future homelessness. We did not find convincing evidence to overturn our proposed suggestions. A detailed discussion is available in Appendix G: Research Question 4 (PTT Reweighting).

In line with the qualitative findings, the next iteration of quantitative analysis will be improved by enhanced data collection. This includes recording all PTT responses and scores (regardless of whether an individual or household received prevention) and the PTT should be given to more eligible people (rather than triaging individuals and households before administering the PTT). We recommend that the predictive modeling exercise described above be repeated after data collection enhancements are implemented. In this way, continual improvement of the PTTs will reflect the latest context and experience of people needing prevention services.

IV. Conclusion and Next Steps

Evidence-based prevention tools like the PTT can ensure that limited resources are reaching people who would otherwise become homeless if they did not receive this help. As detailed in this report, we developed revised Adult, Family, and TAY PTTs that have been reworded and restructured to better capture information on risk factors and, in the case of the Family PTT, reweighted to better predict risk of homelessness. We have also recommended two new questions to capture potential risk factors (recent emergency room utilization and lack of health insurance) and a new question to capture domestic-violence related homelessness risk. These new questions would be weighted zero points during the pilot period. (Once we collect data on these new PTT questions, we can determine appropriate weights for these questions based on their predictive power relative to other PTT questions.)

Revised Family, Adult, and TAY PTTs that incorporate these recommendations are attached to this report in Appendix B. We also drafted a list of best practices and scripts to use before administering the PTT and prior to asking particularly sensitive questions (see Appendix F). Additional recommendations from this research project include providing standardized introductory training on administering the PTT and on the eviction process, and ensuring enhanced data collection for future reweighting and validation efforts.

We recommend that LAHSA implement these changes in a few Service Planning Areas (SPAs) in the Family Coordinated Entry System. Because centralization of PTT administration may be on the immediate horizon for the single adult and TAY systems, LAHSA could pilot these changes through these centralized prevention intake units. Providers piloting the revised PTTs should (1) market prevention services more broadly, (2) administer the PTT to everyone who self identifies as being at risk of homelessness rather than diverting at-risk people to problem solving and/or prescreening people before administering the PTT, and (3) document all PTT responses and scores regardless of whether an individual or household received prevention.

In order to ensure data quality for future modeling efforts, we recommend that the standardized introductory training on administering the PTT include instructions to record all PTT responses and scores regardless of whether an individual or household received prevention services and to administer the PTT to all people seeking homelessness prevention assistance. To encourage diligent data collection for all questions (particularly the new PTT questions that are currently assigned zero points), it may be helpful to briefly explain to staff who administer the PTT that collecting high quality data is a critical component of evaluations to ensure the PTT is assigning prevention services to those who can benefit the most.

After the revised PTTs, trainings, and data collection procedures have been piloted and revised as necessary, the revised PTTs, trainings, and data collection procedures could be implemented throughout all SPAs. After approximately a year of enhanced data collection, we recommend that the modeling exercise described above be repeated.

V. List of Appendices