

BMJ Open Development of the Homeless Health Access to Care Tool to identify health-related vulnerability among people experiencing homelessness: Delphi study, Australia

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To cite: Currie J, Grech E, Longbottom E, *et al*. Development of the Homeless Health Access to Care Tool to identify health-related vulnerability among people experiencing homelessness: Delphi study, Australia. *BMJ Open* 2022;**12**:e058893. doi:10.1136/bmjopen-2021-058893

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2021-058893>).

Received 03 November 2021
Accepted 22 February 2022



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ABSTRACT

Objectives In this paper, we report the development of the Homeless Health Access to Care Tool. This tool aims to improve the gap in assessing health need and capacity to access healthcare of people experiencing homelessness. Tools exist that prioritise people experiencing homelessness for housing, but none specifically designed to prioritise for healthcare, or that are succinct enough to be easily implemented to emergency department or primary healthcare settings.

Design and setting The Homeless Health Access to Care Tool has been adapted from an existing tool, the Vulnerability Index Service Prioritisation Decision Assistance Tool through a five-step process: (1) domain identification, (2) literature review, (3) analysis of hospital admission data, (4) expert judges, and (5) Delphi study.

Participants The tool was adapted and developed by homeless health clinicians, academics and people with lived experience of homelessness. The Delphi study (n=9) comprised emergency department and homeless health clinicians.

Results Consensus was gained on all but one item, five new items were added, and wording changes were made to six items based on expert feedback. Participants perceived the tool would take between 5 to 11 min to complete, the number of items were appropriate, and the majority agreed it would facilitate the assessment of health needs and capacity to access healthcare.

Conclusion Robust development of the Homeless Health Access to Care Tool through the Delphi is the first phase of its development. The Homeless Health Access to Care Tool offers an opportunity to assess both health need and capacity to access healthcare with the aim to improve access to healthcare for people experiencing homelessness. This tool will facilitate standardised data collection to inform service design and data linkage regarding access to healthcare of people experiencing homelessness. The next stages of testing include construct validity, feasibility, usability and inter-rater reliability, and pilot implementation.

Strengths and limitations of this study

- This is the first tool designed to assess health need and capacity to access healthcare for people experiencing homelessness.
- Tool development has followed a rigorous process.
- Less than 50% of the target participants responded to the Delphi study.
- This study was single site.

INTRODUCTION

The 2016 Census estimated that 116 427 people are experiencing homelessness in Australia, Aboriginal and Torres Strait Islander peoples account for up to 20% of this population.¹ People experiencing homelessness are known to have poorer health outcomes and to die up to 20 years earlier than the general population.²⁻⁴ Being homeless places people at greater risk of physical health issues particularly musculoskeletal and skin disorder, respiratory problems, poor oral health, in addition to high levels of drug and alcohol use and mental illness.⁵⁻⁷ A Sydney study of men experiencing homelessness reported 71% had a mental illness.⁸ A recent systematic review and meta-analysis reviewed morbidity and mortality data of four populations who experience social exclusion from high-income countries; prisoners, sex workers, people experiencing homelessness and those with substance use disorders.⁹ Findings identify substantial health inequalities across a range of health conditions, suggesting an association between mortality and social exclusion.⁹ A 15-year retrospective cohort study of homeless and non-homeless attendances to an emergency department



(ED) in Melbourne concluded that at least one episode of homelessness was associated with premature mortality.¹⁰ Over the 15 years, people experiencing homelessness had a higher mortality rate (11.89 vs 8.10 per 1000 person years) and a younger median age at death (66.60 vs 78.19 years).¹⁰

While their health needs in view of the disease burden and injury of people experiencing homelessness are greater, this vulnerable population is less likely to access healthcare services, particularly primary healthcare, for a variety of reasons. As a way of addressing this, we have developed a tool to assess the health need and capacity to access healthcare of people experiencing homelessness, called the Homeless Health Access to Care Tool. Here, we report the development of this tool and its potential to improve the identification and prioritisation of people experiencing homelessness for access to healthcare services.

BACKGROUND

Social determinants of health act as barriers to engaging with health services.^{11 12} People experiencing homelessness are less likely to seek healthcare from a general practitioner than the general population, instead, often resorting to seeking episodic care in ED at a later stage of ill health.¹³ Such an ad hoc and fragmented healthcare journey often results in costly hospital admissions during which underlying health and social needs are not adequately met.^{11 14} When attending an ED for what may appear to be routine healthcare, people experiencing homelessness are more likely to be assessed as a less urgent clinical priority than the general population, despite their complex healthcare needs.¹³ This cohort are more likely to wait longer to receive care in ED¹⁵ and leave before being seen by a health professional and then re-present at a later time.¹⁶ EDs can provide a window of opportunity for intervention as well as delivering healthcare, and hold the potential to break the cycle of homelessness for thousands of people.¹⁷ Increasing access to mainstream primary and preventative care could result in significant health improvements for people experiencing homelessness and significant cost savings to the health system.¹⁸ When people are homeless their use of government services is far greater than when housed, costing an annual average of AUD\$13 100 more per person.¹⁹

The purpose of developing the Homeless Health Access to Care Tool is to appropriately prioritise people experiencing homelessness for healthcare. This can be achieved through the inclusion of an assessment of both their health need and their capacity to access healthcare, thereby shifting the way people experiencing homelessness are assessed when they attend an ED. New models of care that prioritise healthcare for people experiencing homelessness using both health need and capacity to access care offer real potential to improve health outcomes. While their health needs are often greater compared with the general population, people experiencing homelessness

may have reduced capacity to access healthcare. Practicalities such as moving location regularly, funding transport to appointments, personal competing priorities like finding somewhere to sleep compromise their ability to seek healthcare.¹¹ Relationship barriers such as perceived stigma and judgemental attitude from health professionals, which mean it is difficult for a person to enter a hospital/clinic and sit and wait, reduce a person's capacity to access care.¹¹ Across Australia, there are several dedicated homeless health services using different models of care to provide highly effective holistic patient centred care, underpinned by trauma informed practice.¹⁹ While excellent, these services do little to address the inflexibility of mainstream healthcare services or the lack of integration between specialist homeless health services, hospitals, primary health networks and general practices. The very presence of specialist homeless services may even serve to perpetuate the status quo.²⁰

METHOD

The approach to developing the Homeless Health Access to Care Tool is inspired by the three-phased framework reported by Boateng *et al*,²⁰ *Item Development, Scale Development, Scale Evaluation*. So far, Phase 1 Item Development has been completed. Phase 1 comprises domain and item identification. The Delphi study reported below is the final step of phase 1. A summary of the development of the Homeless Health Access to Care Tool is provided in [table 1](#).

The process of developing the Homeless Health Access to Care Tool ([table 1](#)) was undertaken by the authorship team, comprising clinicians, academics, managers and peer support workers with lived experience of homelessness. The authors have a high level of expertise in providing health services to people experiencing homelessness. The original conception of developing and implementing a tool to assess health need and capacity to access healthcare, came from the clinical practice of the lead author (JC), who sought a way to capture the assessment of health vulnerability among people experiencing homelessness. For the purpose of this tool development, health vulnerability is understood as a person's health needs, in relation to their burden of disease and/or injury, and their capacity to access healthcare in relation to their abilities to access the healthcare they require. In terms of abilities, we refer to the definition of access to healthcare proposed by Levesque *et al*:²¹ ability to seek, perceive, reach, pay and engage healthcare.²¹

Following the literature review,²² the tool that appeared most comprehensive in its assessment of health needs was the Vulnerability Index Service Prioritisation Decision Assistance Tool (VI-SPDAT) (Org Code). The VI-SPDAT has 50-items of yes/no questions focused on a person's history of housing and homelessness, risks, socialisation, daily functions and wellness. Now in its third iteration, the VI-SPDAT is used widely across Australia by several key homelessness organisations including Micah Projects

Table 1 Phase 1: item development

Step	Process	Outcome
Domain identification	Two 45-minute authorship team discussions to define vulnerability	Vulnerability defined as a person's level of health need (burden of disease and/or injury) and their capacity to access healthcare (ability to seek, perceive, reach, pay and engage healthcare).
Literature reviews	Scoping reviews of vulnerability indices and behavioural models of vulnerable populations	No existing tools to prioritise people experiencing homelessness for healthcare. Characteristics included in existing tools were documented.
Analysis of existing data	Analysis of the Inclusive Health Research Data 2013–2017: Admissions to emergency department and hospital at the study site. ³⁹	People experiencing homelessness attending ED (n=2075), inpatient admissions (n=10 624), were most frequently admitted to the specialties of psychiatry (24.7%), nephrology (16.5%), addiction medicine (9.4%). Most frequent principle diagnosis on admission were renal failure requiring dialysis (17.3%), mental and behavioural disorders due to alcohol dependence (4%). Most frequent comorbidities for those admitted were drug abuse (28.2%), alcohol abuse (25%), liver disease (21.5%), renal failure (18.9%), psychoses (16.4%), depression (6.9%). Principle procedures on admission were social work (32.6%), haemodialysis (22.1%), physiotherapy (6.3%), occupational therapy (5.2%) and alcohol detoxification (2.3%).
Expert judges	Through four 45-minute consultations, the authorship team adapted the Vulnerability Index—Service Prioritisation Decision Assistance Tool (50-items).	Homeless Health Access to Care Tool (19-items), with the aim of prioritising people experiencing homelessness for healthcare.
Content validity	Delphi study (2-rounds)	Consensus achieved on all but one item. Five new items added, alterations to the wording of six items.

ED, emergency department.

in Brisbane,²³ Australian Alliance to End Homelessness,²⁴ Homelessness NSW²⁵ and the Western Australia Initiative.²⁶ The VI-SPDAT is primarily used to prioritise people experiencing homelessness for housing and it has undergone substantial psychometric testing. The authorship team agreed that adapting the VI-SPDAT, was preferable to generating a new tool. Adapting the VI-SPDAT would potentially facilitate implementation of the Homeless Health Access to Care Tool, given that most key organisations already use the VI-SPDAT and hold databases for VI-SPDAT data.

Having adapted the VI-SPDAT, a Delphi study was conducted to gain consensus on the items comprising the Homeless Health Access to Care Tool, reported here using the CREDES guideline.²⁷ The Delphi design was chosen to allow experts, who are also future users of the tool, to reflect on the items included and provide guidance on their potential validity. The Delphi study design included the fundamental components of a Delphi: anonymity, iteration, controlled feedback and statistical group response.²⁸ A modified two-round Delphi approach²⁹ was conducted. The decision to hold two rounds was made a priori, on the basis that this would be sufficient to gain consensus on the tool's items, and that most of the participants involved had capacity to review the tool twice, given their current workloads, particularly the impact of COVID-19 on ED attendances.

This modified Delphi research project was undertaken at a tertiary hospital in Sydney through email dissemination of two electronic surveys, via the Survey Monkey platform (Momentive). The study site treats a high proportion of people experiencing homelessness in the inner city area that it serves. To obtain the most reliable and relevant opinion, a series of experts, who were known to the authorship team as having substantial experience and expert knowledge and skills in providing healthcare to people experiencing homelessness were purposively recruited.^{30 31} Potential participants (n=22) included an aboriginal health worker, peer support workers, social workers, psychologists, registered nurses and medical practitioners (n=22) who practised in the ED or Homeless Health Service.

The two surveys were administered 8 weeks apart by email. The second survey was sent to each of the participants that responded to the first survey. A copy of the tool and the definition of the domains of health need and capacity to access care were provided to participants within the online survey. The first survey served as a template for the second and included questions relating to the relevance of the Homeless Health Access to Care Tool items. For each answer, participants were asked to provide their rationale for their rating of each item. Participants were asked three generic questions in both survey rounds relating to (1) the length of time

they perceived it would take to complete the survey, (2) whether the Homeless Health Access to Care Tool facilitated an assessment of health need and capacity to access care, and (3) the appropriateness of the number of questions in the tool. A copy of the surveys are available on request to the corresponding author. A flow chart of the stages of the Delphi study is available as a supplementary file (online supplemental figure 1).

Quantitative data were imported to SPSS V.27 (IBM Corp) for analysis. The statistical group responses were measured using an item level content validity index, to identify the proportion of participants rating a construct as relevant to the total number of those rating the construct.³² Using the online survey, participants assessed each item of the Homeless Health Access to Care Tool for relevance on a four-point scale (1=not relevant, 2=somewhat relevant, 3=quite relevant, 4=highly relevant). The four-point scale was dichotomised and the proportion of participants reporting items which were quite relevant or highly relevant was described. The average congruency percentage was measured for each item, with consensus defined as 85%. There is no specified minimum level of consensus in Delphi studies, and consensus can range from 50% to 100%. The figure of 85% provided a high standard of consensus for the tool. The qualitative data were analysed using an adaptation of Braun and Clarke's³³ thematic analysis (familiarisation, coding, primary themes, reviewing themes). Data were analysed question by question in relation to each participant's quantitative response provided. The qualitative analysis enhanced the richness of the data by providing an understanding of the underlying motivation and reasons for each participant's response.

Patient and public involvement statement

There was no patient involvement in this study.

RESULTS

Delphi survey 1

The first round of the Delphi survey received n=10 responses (n=8 from the Homeless Health Service, n=2 from ED), n=3 registered nurses, n=2 medical specialists, n=1 medical registrar n=1 social worker, n=2 peer support workers, n=1 health service manager. The length of time the participants had been in their current role ranged from 6 weeks to 11 years, median 3.5 years (IQR 4.5). Participants were asked how long they thought it would take to complete the Homeless Health Access to Care Tool, answers ranged from 5 min to 11 min, with a median of 10 min (IQR 2.0). Participants perceived the number of items included were appropriate (n=5 strongly agree, n=5 somewhat agree) and the majority perceived the tool would facilitate the assessment of health need and a person's capacity to access healthcare (n=1 strongly agree, n=8 somewhat agree, n=1 disagree). Percentage of agreement between experts is shown in [table 2](#), consensus

(85% agreement) was achieved on all but four of the items.

Following the first Delphi round, the authorship team reviewed the qualitative explanations provided by participants and made changes to the four questions that did not achieve consensus. Based on the qualitative feedback, alterations to the wording and content of six other items were made and five new items were added, shown in [table 3](#). The order of appearance of several items was changed, so that questions perceived as extremely sensitive were asked towards the end of the tool, therefore providing maximum opportunity to establish trust before asking confronting questions, for example, the question related to feeling threatened by another person. Greater detail was added to some of the questions in terms of the answer options available to choose from, for example, the options for the question 'Where do you sleep most frequently' were broadened to include sleeping on a train, sleeping in a hotel, sleeping in a motel. The thematic analysis of the qualitative comments is shown in [table 4](#).

Delphi results survey 2

Following these revisions, the Homeless Health Access to Care Tool was disseminated to participants along with the second survey and a summary of the results from the first survey. The second survey included only the four items for which consensus was not achieved. Survey two received n=9 responses, one participant no longer practised at the study site, one of the original participants did not respond to the second survey and one participant who did not complete the first survey completed the second survey; therefore, n=8 participants completed both surveys. The participant that responded to the second survey and not the first had received the survey accidentally. The authorship team included the participant's response to enhance the sample size and critical assessment of the tool. Consensus was achieved on all but one of the items ([table 5](#)). Consensus was not achieved for the question 'What is the total time you have ever lived on the street or in emergency accommodation?' 'Days Weeks Months Years '. The rationale provided in the qualitative feedback from the participants (n=2) in disagreement, suggested that they perceived the length of time spent homeless did not necessarily impact on the level of vulnerability a person may experience.

"I think one night is just as significant as multiple. Identifies vulnerability either way" (Participant 3).

"Not sure. May be highly vulnerable even after short time" (Participant 2).

Based on the feedback, the wording of this question was altered slightly as follows, 'What is the total time that you have experienced homelessness?' Days Weeks Months Years ([table 3](#)). There were very few qualitative comments from participants in survey 2, shown in [table 5](#).

Table 2 Percentage of agreement of experts for each item

Question	Round one		Round two	
	N	Agreement	N	Agreement
Number of questions	10	100%	9	100%
Facilitate objective assessments	10	90%	9	100%
What language	10	80%	9	100%
Where do you sleep	10	80%	9	100%
Total time on streets	10	70%	9	67%
Past 6 months ED Ambulance	10	70%	9	89%
Medicare	10	90%		
Do you avoid care	10	100%		
Is there someone emergency contact	10	90%		
Take care daily needs	10	100%		
Feel unsafe	10	100%		
Medical conditions	10	100%		
Currently pregnant	10	100%		
Consumed alcohol	10	90%		
Diagnosed with Mental Health	10	90%		
Learning disability	10	90%		
Medications told to take	10	90%		
Best way to contact you	10	90%		
Do you identify as Aboriginal and or Torres Strait Islander	10	100%		

ED, emergency department.

DISCUSSION

In this paper, the results of a Delphi study of the Homeless Health Access to Care Tool are reported. Following the first round, consensus was not achieved on four questions. Based on feedback, five new items were added, the wording of six items were altered and the order of seven items were changed. Following the second round, consensus was achieved on all but one item in the tool relating to the association between the length of time homeless and level of vulnerability. The authorship team responded by making alterations to the wording of this item to reflect the feedback provided by the participants. The item was not removed because the relationship between the length of time a person experiences homelessness and poor health outcomes is well established in the literature.^{5 34} The Delphi study is the first stage in a rigorous process undertaken to evaluate the quality and relevance of the Homeless Health Access to Care Tool.

The next phase of developing the Homeless Health Access to Care Tool will focus on Scale Development.²² This will include pretesting the items to ensure they are meaningful and establishing the construct validity and interrater reliability of the tool. The construct validity will be tested using fictional case studies, of which clinicians are asked to first ‘instinctually’ rate the case studies as slightly/moderately/highly vulnerable, and then rate the case studies using the Homeless Health Access to Care

Tool. Once validity and reliability are established, a process of item reduction will be undertaken to ensure the tool is as short as possible.²² Feedback received from the Delphi suggested the need to ensure the Homeless Health Access to Care Tool is as short in length as possible. The conciseness of the tool is likely to improve both clinicians and clients’ compliance in completing it, with the challenge to include all relevant items for acceptable validity and reliability of the test. This is also consistent with the aim of developing the Homeless Health Access to Care Tool, as the VI-SPDAT was deemed too lengthy to be undertaken in settings such as EDs.

One of the anticipated advantages of implementing the Homeless Health Access to Care Tool is the capacity to accurately screen for homelessness among attendees to EDs. The 2016 Australian Census estimated that 7% of the 116, 427 people experiencing homelessness were rough sleeping, and the remainder were experiencing secondary and tertiary homelessness.¹ Homelessness can be challenging to detect, particularly secondary and tertiary homelessness, since people may provide a fictitious address, or they might provide the address of a boarding house, hostel or drop-in centre. Homelessness is often undetected in patients presenting to EDs. Findings of a recent study in Melbourne, Australia indicated that a prospective screening of housing status improved identification of all forms of homelessness from 0.8% to

Table 3 Changes made the Homeless Health Access to Care Tool (HHACT) Delphi rounds 1 and 2

HHACT version 1	HHACT version 2	Rationale for the changes made
What's your name? DoB: Age: In what language do you express yourself? Interpreter required?	What's your name? DoB: Age: What is your first language? Interpreter required?	Questions combined and slight wording change based on qualitative feedback
	What gender do you identify with: Male Female Other Prefer not to say don't know? What are your pronouns? She/Her He/Him/They/Them Name only Prefer to self-describe Do you identify as LGBTIQ+? Prefer not to say	Added question based on qualitative feedback. Format of the question informed by the LGBTIQ+Inclusive Practice Guidelines for Homelessness and Housing Sectors Australia
Are you currently or could you be pregnant? Y N	Are you currently or could you be pregnant? Y N	Order of appearance of question moved
Where do you sleep most frequently?	Where do you sleep most frequently, how long have you been staying there?The streets Train Car Crisis Emergency accommodation/ shelter/ refuge Staying with family or friends Caravan Hotel/motel/ Hostel/Boarding house	Added prompts to distinguish the type of homelessness and timeframe
What is the total time you have ever lived on the streets or in emergency accommodation?	What is the total time that you have lived on the streets or in emergency accommodation? Days Weeks Months Years	Wording simplified based on survey 2 feedback
On a typical day what is the best way to contact you?	On a typical day what is the best way to contact you?	Order of appearance of question moved
Is there someone we can contact for you in an emergency? Y N Friend Relative Other:	Is there someone we can contact for you in an emergency? Y N Friend Relative Other: Name Mobile number:	Order of appearance changed
Do you have a Medicare card? Y N Number:	Do you have a Medicare card? Y N Number:	Order of appearance changed
Do you identify as Aboriginal or Torres Strait Islander? Y N Are you or were any members of your community part of the stolen generation? Y N	Do you identify as Aboriginal or Torres Strait Islander? Y N Are you or were any members of your community part of the Stolen Generation? Y N	Order of appearance changed
	Are you a refugee or seeking asylum? Y N	Question added based on qualitative feedback
Do you avoid healthcare or are you unable to go for healthcare when you are not feeling well? Avoids care Y N Why? Unable to go for care? Y N Why?	Are you able to go for healthcare when you are not feeling well? Unable to go for, or avoids care? Y N Why?	Language changed from 'do you avoid' to 'are you able' based on feedback that this question could be perceived as accusatory
In the past 6 months, how many times have you: Received healthcare at an ED? Taken an ambulance to hospital? Have you had an admission to hospital for your mental health or physical health?	In the past 6 months, how many times have you: Received healthcare at an emergency department? Taken an ambulance to hospital? Been admitted to hospital? Spent time in prison or under police custody?	Language simplified based on qualitative feedback and a question about prison/ police custody given the vulnerability of this population added
Are you currently able to take care of your daily needs like bathing, changing clothes, using a toilet, getting food and clean water and other things like that? Y N Observation: Does the client appear able to take care of daily needs? Y N	Are you currently able to take care of your daily needs like showering, changing clothes, using a toilet getting food and something to drink? Y N Does the client appear able to take care of daily needs? Y N Do you get money from Centrelink, job, inheritance Department of Veterans' Affairs, Charity, No income	Slight wording change from bathing to showering and from clean water to something to drink and removed 'other things like that' based on feedback. Added a question regarding income, based on qualitative feedback

Continued

Table 3 Continued

HHACT version 1	HHACT version 2	Rationale for the changes made
Do you have any medical conditions? A serious brain injury/head trauma Kidney disease/dialysis Gastric disorders Liver disease/cirrhosis Heart disease High or low blood pressure, Emphysema/Chronic Obstructive Pulmonary Disease/asthma Diabetes Cancer Hepatitis C Epilepsy/seizures HIV/AIDs Heat stroke/exhaustion TB Cellulitis, Other	Has a health professional told you that you have any medical conditions? A serious brain injury/head trauma Kidney disease/dialysis Gastric disorders Liver disease/cirrhosis Heart disease High or low blood pressure Emphysema /Chronic Obstructive Pulmonary Disease/asthma Diabetes Cancer Hepatitis C Epilepsy /seizures HIV/AIDs Heat stroke/exhaustion TB STI Physical injury Cellulitis Obesity Other: (specify)	Added STI and physical injuries, slight wording changed based on qualitative feedback
Are there any medications that you have been told to take each day? Y N Are you taking these as advised? Y N What are they?	Are there any medications that you were advised to have regularly? Y N What are they? Are you taking these as advised? Y N Can you tell us why not? Can't afford them Unpleasant side effects They were stolen Unable to store them Forget to take, you don't think you need them, Other	Added question about why they may not be taking their medications based on feedback, prompts derived from the VI-SPDAT
Have you consumed alcohol Y N and/or drugs Y N almost every day or every day for the past month? Observation: Does the person appear under the influence of drugs/alcohol now? Y N Does the person appear to be withdrawing from drugs/alcohol now?	Have you consumed alcohol Y N and/or drugs Y N Almost every day or every day for the past month? Observation: Does the person appear under the influence of drugs/alcohol now? Y N Does the person appear to be withdrawing from drugs/alcohol now?	No change to the wording but slight order changed based on qualitative feedback regarding capacity to assess a person's withdrawal through direct observation
Have you ever been diagnosed with a mental health condition? Anxiety Depression PTSD Bipolar Disorder Schizophrenia Psychosis Personality Disorder Do you ever have thoughts of self-harm? Y N Do you ever have thoughts of suicide? Y N	Are you or has someone told you they are worried about your mental health? Y N Have you ever been diagnosed with a mental health condition? Y N Anxiety Depression PTSD Bipolar Disorder Schizophrenia Psychosis Personality Disorder Cognitive impairment/dementia Other (specify) Do you ever have thoughts of self-harm? Y N Do you ever have thoughts of suicide? Y N Observation: Does the person demonstrate any signs and/or symptoms of a mental illness? Y N	Added question about concern for mental health and observation question based on feedback that some people particularly those with psychotic illness may not be aware of, or admit that they have a mental illness, but their symptoms can be observed. Added question about cognitive impairment/dementia based on feedback that these conditions can increase vulnerability
Have you ever been told you have a learning disability or developmental/intellectual disability? Y N	Have you ever been told that you have a disability? Y N Physical Intellectual Sensory Cognitive Psychosocial Receiving National Disability Insurance Scheme Receiving Disability Support Pension	Wording simplified, categories of disability added, based on the National Disability Insurance Scheme categories
Is there anyone that you feel unsafe with/threatened by or that causes you harm in any way? Y N	<i>Note: Before asking this question, please consider if it is appropriate (safe) to do so</i>	Added disclaimer to ensure safety is considered and question moved to the end of the survey

ED, emergency department; PTSD, post-traumatic stress disorder ; SPDAT, Service Prioritisation Decision Assistance Tool; STI, sexually transmitted infection.

7.9%.³⁵ Given that people experiencing homelessness are more likely to seek care from EDs than primary care settings,^{4 36} identifying homelessness status provides an opportunity to strengthen the ED response and significantly improve access to healthcare and health outcomes for this population.³⁵

Development of the Homeless Health Access to Care Tool seeks to address the health vulnerability associated

with homelessness. This health vulnerability is a combination of increased prevalence and complexity of health-care needs, and the challenges of accessing healthcare services when experiencing homelessness. Unless level of homelessness, health need and ability to access health-care of people experiencing homelessness are identified by clinicians and appropriately prioritised and responded

**Table 4** Qualitative responses round one Delphi survey

Theme and frequency	Example
<i>The number of questions included in the adapted VI-SPDAT is appropriate. Somewhat agree=5, Strongly agree=5</i>	
Time (n=4) Comprehensive (n=9)	'in ED...staff will be less hesitant to use it if they have less to do.' (Time)
Privacy (n=1) Number of questions (n=4) Client connection (n=3)	'It is short yet comprehensive enough to be able to illicit information from a person within a short space of time.' (Comprehensive)
<i>The questions included in the adapted VI-SPDAT will facilitate the objective assessment of people experiencing homelessness in relation to their ability and need to access healthcare? Strongly agree=1, Agree=8, Disagree=1</i>	
Evidence base (n=1) Access to care (n=2) Validity (n=2) Self-report (n=2) Scoring (n=3)	'This couldn't be used as a 1 short assessment where you can be 100% confident in the results.' (Access to care) 'In total these aspects and questions are a good indication of their ability to access.' (Validity)
<i>In what language do you express yourself? English <input type="checkbox"/> Other: Interpreter required? Y <input type="checkbox"/> N <input type="checkbox"/> Highly relevant=5, Quite relevant=3, Somewhat relevant=1, Not relevant=1</i>	
Communicating (n=4) Understanding (n=2) Interpreter (n=3) Way of asking (n=2)	'Very relevant question in terms of communication/miscommunication' (Communication) 'if an interpreter is required then you would get one prior to commencing the questions' (Interpreter)
<i>Medicare? Y <input type="checkbox"/> N <input type="checkbox"/> Number: Highly relevant=5, Quite relevant=4, Somewhat relevant=0, Not relevant=1</i>	
Relevance of question (n=6) Lost cards (n=1) Context (n=1)	'frequent problem and impedes many services/access to care if lost' (Relevance of question) 'ED viewpoint—This should happen at admin [Reception desk].' (Context)
<i>Do you identify as Aboriginal or Torres Strait Islander: Y N Are you or were any members of your community part of the stolen generation? Y N Highly relevant=10</i>	
Culturally appropriate care (n=5) Morbidity /mortality (n=3) Trauma (n=3) Access (n=1)	'Can provide context as to how a clinician might approach assessment in a culturally appropriate way/ make allowances for communication issues related to mistrust of the system, etc. May inform more appropriate treatment planning that is, referral to Indigenous workers/services.' (Culturally appropriate care)
<i>Where do you sleep most frequently? Highly relevant=6, Quite relevant=2, Somewhat relevant=2, Not relevant=0</i>	
Timeframe (n=1) Sleeping location (n=1) Contacting a client (n=4) Context to client's well-being (n=1) Rapport (n=3)	'Not always a question some homeless people want to answer, especially if there may be fears around a system being enacted on them. Often a question of trust and individual rapport between clinician/ person.' (Rapport)
<i>What is the total time you have ever lived on the streets or in emergency accommodation? Highly relevant=5, Quite relevant=2, Somewhat relevant=3, Not relevant=0</i>	
Other reasons for vulnerability (n=2) Correlate to ill health (n=3) Context to well-being (n=5) Subjective (n=1)	'Relevant in there being a statistical correlation between length of time homeless and morbidity/early mortality.' (Ill health) 'The longer someone has been in the named situation is a good indication of their level of trauma and of the level of support they will need post housing.' (Context of well-being)
<i>Do you avoid healthcare or are you unable to go for healthcare when you are not feeling well? Avoids care Y N Why? Unable to go for care? Y N Why? Highly relevant=8, Quite relevant=2, Somewhat relevant=0, Not relevant=0</i>	
Indicates barriers (n=1) Capacity to access (n=3) Indicate chronic illness (n=1) Self-report (n=1) Provide support (n=2) Posing question (n=2)	'Relevant in terms of assessing capacity/insight/need for treatment/issues around treatment history' (Capacity to access) 'Yes, allows us to be able to provide support to the person to feel more comfortable to access healthcare if we know the reasons why they may avoid it or are unable to attend.' (Provide support) 'For some reason I feel that asking this question may come across as accusatory, however maybe if rephrased.' (Posing question)
<i>In the past 6 months, how many times have you: Received healthcare at an emergency department? Taken an ambulance to hospital? Have you had an admission to hospital for your mental health? Have you had an admission to hospital for your physical health? Highly relevant=4, Quite relevant=3, Somewhat relevant=2, Not relevant=1</i>	
Posing question (n=1) perception of healthcare received (n=1) Access to care (n=4) Self-report (n=1) Frustrate client (n=1)	'Highly relevant in terms of identifying/triaging/ access to services/treatment planning/treatment history.' (Access to care) 'Relevant but also can be subjective based on memory capabilities' (Self-report)
<i>Is there someone we can contact for you in an emergency? Y N Friend Relative Other: Highly relevant=6, Quite relevant=3, Somewhat relevant=0, Not relevant=1</i>	
Safe place/relationship (n=5) Indicate trauma (n=2) Not relevant (n=1)	'May indicate a safe place and relationship to enlist for support.' (Safe place/relationship)
<i>Are you currently able to take care of your daily needs like bathing, changing clothes, using a toilet, getting food and clean water and other things like that? Observation: Does the client appear able to take care of daily needs? Highly relevant=9, Quite relevant=1</i>	

Continued

Table 4 Continued

Theme and frequency	Example
Inclusion of observation (n=1) Indicates disorganisation (n=5) Links to services (n=2) Posing question (n=1)	'one of the few observed measures, marker of general disorganisation' (Indicates disorganisation) 'We need to know what access they have, if they choose to use or not is a different story.' (Links to services)
<i>Is there anyone that you feel unsafe with/threatened by or that causes you harm in any way? Highly relevant=9, Quite relevant=1</i>	
Access to care (n=1) Identifying domestic violence (n=3) Posing question (n=4) Indicate need for referral (n=2)	'Identifying someone's safety concerns/issues is an essential component to emergency care' (Identifying domestic violence) 'Probably a question I would ask towards the end of an interview when hopefully some rapport has been established.' (Posing questions)
<i>Do you have any medical conditions? A serious brain injury/head trauma Kidney disease/ dialysis Gastric disorders Liver disease/cirrhosis Heart disease High or low blood pressure Emphysema/Chronic Obstructive Pulmonary Disease/asthma Diabetes Cancer Hepatitis C Epilepsy/seizures HIV/AIDS Heat stroke/exhaustion TB Cellulitis Other: Highly relevant=7, Quite relevant=3</i>	
Add other issues (n=1) Symptoms Indicates well-being (n=2) Access to care (n=2) Posing the question (n=2)	'Allows us to provide specific care and treatment to the person if they are aware of their medical conditions. Also, by asking the question it avoids us missing out on important health information.' (Access to care) 'Just need to reduce the conditions if possible.' (Posing the question)
<i>Are you currently or could you be pregnant? Y N Highly relevant=10</i>	
Trauma (n=2) Referrals to obstetric care (n=4) Increases vulnerability risk (n=2)	'May avoid healthcare interaction if traumatic interaction re loss of previous children' (Trauma) 'Needs link into antenatal care if pregnant.' (Referral to obstetric care)
<i>Have you ever been diagnosed with a mental health condition? Anxiety Depression PTSD Bipolar disorder Schizophrenia Psychosis Personality Disorder Do you ever have thoughts of self-harm? Y N Do you ever have thoughts of suicide? Y N Other: Highly relevant=8, Quite relevant=1, Somewhat relevant=1, Not relevant=0</i>	
Posing the question (n=2) Ability to access (n=2) Common issue (n=2) Shame (n=1) Referral (n=2)	I would tend to adjust the questions about existing diagnoses for example, schizophrenia—I find those who have been diagnosed usually disagree but do admit to experience of positive symptoms.' (Posing the question) 'In total these aspects and questions are a good indication of their ability to access.' (Ability to access)
<i>Have you ever been told you have a learning disability or developmental/intellectual disability? Y N Highly relevant=6, Quite relevant=3, Somewhat relevant=1, Not relevant=0</i>	
Ability to interpret experience (n=2) Assessment of baseline (n=2) Associated trauma (n=1) Providing appropriate care (n=3)	'Relevant in identifying baseline functioning/capacity/appropriate treatment planning' (Assessment of baseline) 'Allows us to provide appropriate care to the person and also allows us to provide information to the person appropriate to their level of understanding.' (Providing appropriate care)
<i>Are there any medications that you have been told to take each day? Y N Are you taking these as advised? Y N What are they? Highly relevant=8, Quite relevant=2</i>	
Reason why (n=1) Compliance (n=3) Assessment (n=4) Health literacy (n=1)	'Need to be able to know what a person is taking to identify current management of/differentiate potential withdrawal/at risk/medical emergency states. 'May provide information about medical and other conditions.' (Assessment)
<i>On a typical day what is the best way to contact you? Highly relevant=9, Quite relevant=1</i>	
Support structure (n=1) Continuity (n=1)	'Might be good to ask about informal supports such as other incredible organisations we collaborate with basic probe for ability to connect to care' (Support structure)

ED, emergency department; PTSD, post-traumatic stress disorder; VI-SPDAT, Vulnerability Index Service Prioritisation Decision Assistance Tool.

to, this marginalised population will continue to experience health inequalities.

Secondary outcomes of implementing the Homeless Health Access to Care Tool include its potential to reduce those that did not wait for treatment and reattendances to the ED, both of which are notably high among people experiencing homelessness.^{13 35} Once the Homeless Health Access to Care Tool is validated, pilot implementation will be supported by a decision assistance tool that provides an escalation pathway to specific services and health professionals. This decision assistance tool will be designed to respond to the score of vulnerability a person receives from the Homeless Health Access to Care Tool and will be implemented when a person experiencing

homelessness attends the ED or a specialist homeless health service. This escalation pathway together with increased identification of homelessness aims to facilitate the assessment of health-related vulnerability and prioritisation of care for people experiencing homelessness.

Collecting data using the Homeless Health Access to Care Tool may also provide opportunities to link administrative data sets, to improve the visibility of access to services (eg, social, housing, health and police) for people experiencing homelessness. Aggregating linked data sets can be a powerful resource in identifying and mapping service access in specific geographical areas or contexts.³⁷ By capturing people's interactions with multiple systems and institutional settings, linked data

**Table 5** Qualitative analysis of Delphi survey round 2**'What is your first language?' 'interpreter required?' Y N Highly relevant n=7 Quite relevant n=2**

Theme	N	Example
Clarity	3	'Missed data without appropriate communication'
<i>'Where do you sleep most frequently? How long have you been staying there? The streets Train Car Crisis or emergency accommodation/shelter/refuge Staying with family or friends Caravan Hotel/motel Hostel Boarding house Other: Specify Highly relevant n=8 Quite relevant n=1</i>		
Access to healthcare	3	'May give insight into access to healthcare within the area they sleep, that is, crisis emergency accommodation etc'
<i>'What is the total time you have ever lived on the streets or in emergency accommodation?' Days Weeks Months Years Highly relevant n=4 Quite relevant n=2 Somewhat relevant n=3</i>		
Length of homelessness	2	'I think one night is just as significant as multiple. Identifies vulnerability either way.'
Insight to general health	3	'Highly relevant—Can potentially tell you lots about a person's general level of health.'
Posing question	1	'In my experience this question would be incorporated in the question above. about living/sleeping conditions.'
<i>'In the past 6 months, how many times have you: Received healthcare at an Emergency Department? Taken an ambulance to hospital? Been admitted to hospital? Spent time in prison or under Police custody?' Highly relevant n=6 Quite relevant n=2 Not relevant n=1</i>		
Accuracy of self-reporting	2	'In my experience I'm not sure how many clients would be able to answer his accurately and therefore how useful it would be to us.'
Access to healthcare	2	'Can give some idea of how unwell/vulnerable a person may be, information about help seeking, hope, motivation, goals, etc.'

sets can be used for programme evaluation in healthcare and social sciences.^{37 38} Fundamental to linked data is establishing the standardised collection of data for homelessness services.³⁸ Reported in an article by Culhane, 2019,³⁸ standardised data collection processes exist in the USA, Canada, Netherlands and Denmark, but not yet in Australia. As a step towards the standardised collection of health data, implementation of the Homeless Health Access to Care Tool across health networks has the benefit of enabling comparisons and triangulation of data relating to homeless populations.

LIMITATIONS

This study has some limitations. Less than 50% (n=8) of the n=22 clinicians that were approached completed both surveys. While there is no specific minimum or maximum sample required for a Delphi study, this has implications for the breadth of feedback provided on the items in the tool. We believe the response rate reflected the tempo of activity in the clinical areas, secondary to the COVID-19 pandemic. Further, this was a single site study and the feedback on the tool may not be generalisable to the opinions of clinicians at other sites. The next phase of the development of the Homeless Health Access to Care Tool involves psychometric testing at two study sites in different Australian states. This will provide the opportunity for clinicians at a second site to feedback on the face validity of the tool and its feasibility in the ED and Homeless Health Service settings, which may go towards mitigating the impact of this single site Delphi approach. It is acknowledged that the Delphi participants

did not include consumers. The authorship team who developed this tool includes people with lived experience of homelessness, which we believe will have enhanced the feasibility of the tool. The next stage of the tool's development, psychometric testing, includes administration of the tool to people experiencing homelessness, and their feedback on the tool will be sought through a short five question survey. We believe this will provide an important opportunity to assess the face validity, acceptability and usability of the tool.

CONCLUSION

Tools exist that prioritise people experiencing homelessness for housing, but none that are specifically designed for prioritising for healthcare. The Homeless Health Access to Care Tool offers the opportunity to assess both health need and capacity to access healthcare, with the aim to improve access to healthcare for people experiencing homelessness. The Homeless Health Access to Care Tool also provides a standardised method of data collection, which may improve data linkage opportunities and thereby improve the transparency of the health profile and access to services for people experiencing homelessness.

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Acknowledgements The authors thank the participants of the study.

Contributors Guarantor for the overall content: JC. Study conception, study design, ethical approval: JC and EG. Analysis of data: JC, EG and LJ. Interpretation of data, refinement of tool, drafting manuscript: all authors.

Funding Funding was received from the Applied Medical Research Inclusive Health, St Vincent's Clinic Foundation Research Grants supported by the St Vincent's Health Australia Inclusive Health Program.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval The study was reviewed and piloted within the authorship team and approved by the relevant ethics committee (2020/ETH02390). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. Data are available upon reasonable request to the corresponding author.

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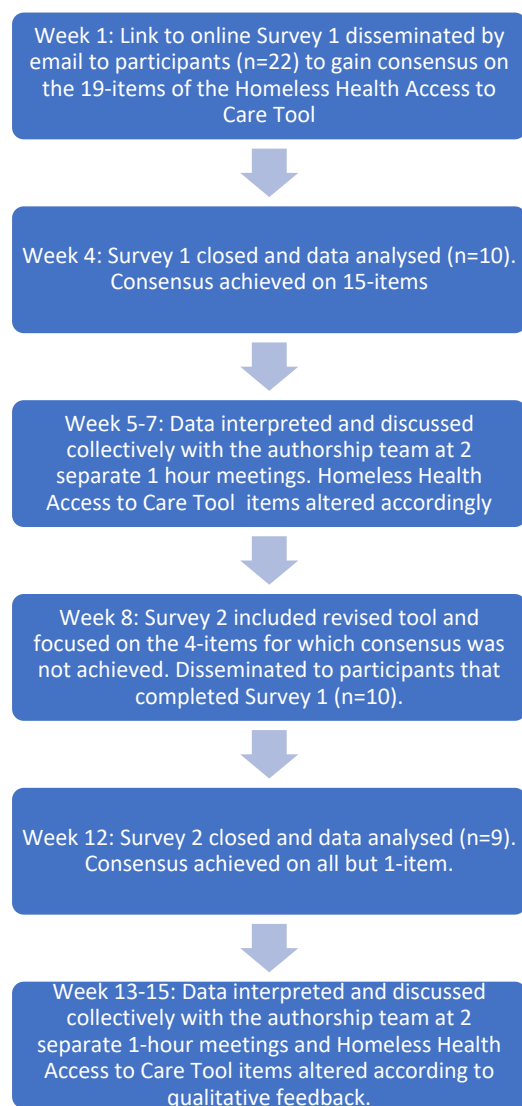
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Supplementary Fig 1: Delphi flow diagram