BMJ Open Exploring COVID-19 vaccine uptake, confidence and hesitancy among people experiencing homelessness in Toronto, Canada: protocol for the Ku-gaa-gii pimitizi-win qualitative study

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ABSTRACT

Introduction People experiencing homelessness are at high risk for COVID-19 and poor outcomes if infected. Vaccination offers protection against serious illness, and people experiencing homelessness have been prioritised in the vaccine roll-out in Toronto, Canada. Yet, current COVID-19 vaccination rates among people experiencing homelessness are lower than the general population. This study aims to characterise reasons for COVID-19 vaccine uptake and hesitancy among people experiencing homelessness, to identify strategies to overcome hesitancy and provide public health decision-makers with information to improve vaccine confidence and uptake in this priority population.

Methods and analysis The Ku-gaa-gii pimitizi-win qualitative study (formerly the COVENANT study) will recruit up to 40 participants in Toronto who are identified as experiencing homelessness at the time of recruitment. Semistructured interviews with participants will explore general experiences during the COVID-19 pandemic (eg, loss of housing, social connectedness), perceptions of the COVID-19 vaccine, factors shaping vaccine uptake and strategies for supporting enablers, addressing challenges and building vaccine confidence. Ethics and dissemination Approval for this study was granted by Unity Health Toronto Research Ethics Board.

Findings will be communicated to groups organising vaccination efforts in shelters, community groups and the City of Toronto to construct more targeted interventions that address reasons for vaccine hesitancy among people experiencing homelessness. Key outputs will include a community report, academic publications, presentations at conferences and a Town Hall that will bring together people with lived expertise of homelessness, shelter staff, leading scholars, community experts and public health partners.

INTRODUCTION

The COVID-19 pandemic has exacerbated and entrenched health inequities for people experiencing homelessness. Rates of acute and chronic physical and mental health conditions are higher among homeless

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ One of the first qualitative studies to explore reasons for COVID-19 vaccine confidence, uptake and hesitancy among people experiencing homelessness in Canada.
- ⇒ The recruitment strategy leverages an existing cohort study, enabling us to include participants with different gender and ethno/racial identities, and different vaccination statuses at time of recruitment.
- ⇒ Hiring peer researchers with lived experience of homelessness onto the research team can create rapport with participants, generates more in-depth and nuanced data that are appropriately contextualised and helps to ensure study results support community-identified strategies to improve vaccination efforts.
- ⇒ This study asks participants themselves to identify strategies to improve vaccine uptake among people experiencina homelessness, ensurina strategies reflect participant knowledge and expertise.
- ⇒ Participants were sampled from people experiencing homelessness staying in congregate settings (eg, shelters) and therefore excludes individuals living on the street or staying temporarily with friends

populations, 1 2 and many of these conditions are known to be risk factors for poor outcomes among individuals with COVID-19.^{3–6} Those who live in congregate settings are at higher risk for contracting COVID-19 because of shared living spaces, crowding, difficulty achieving physical distancing and, in shelters, high population turnover. ^{7–9} A UK study modelled transmission among people experiencing homelessness and found it to be higher than transmission in the broader community.¹⁰ This finding was echoed by



Kiran and colleagues in Toronto, Canada, who found positive COVID-19 test results in 14% of 504 tests conducted at shelters under outbreak status and 2% of 469 surveillance tests, rates that were the same as or higher than the general population during the same time period. Both study findings suggest that outbreaks in congregate settings such as shelters are likely to remain a substantial public health concern.

Vaccination is promoted as one of the best means of protection against serious illness from COVID-19. Given increased risk for infection, people experiencing homelessness have been prioritised for the vaccine roll-out in many countries, including Canada. While information to date on COVID-19 vaccine uptake among people experiencing homelessness is sparse, current literature suggests low uptake when compared with the general population. A US study reports veterans experiencing homelessness were 18.5% less likely to choose vaccination against COVID-19 compared with the general population. ¹² In Ontario, Canada, administrative health data showed that COVID-19 vaccine uptake among recently homeless healthcare users was 25% lower than among Ontarians overall—61% had received one dose and 47% had two doses. 13 In Toronto, Ontario's largest city and where this current study takes place, 76% of those 12 and older staying in the shelter system have received a first dose of the COVID-19 vaccine, 65% a second dose and 13% a third dose, despite wide COVID-19 vaccine availability. 14 This is markedly lower than the general population 12 and older, where 91% have received a first dose, 88% their second dose and 56% a third dose. 15

Vaccine hesitancy is believed to play a role in the low COVID-19 vaccine uptake rates among certain populations, such as ethnic minorities, ¹⁶ ¹⁷ but further studies on the drivers of COVID-19 vaccine confidence and hesitancy are needed to address barriers to COVID-19 vaccine uptake for people experiencing homelessness. Vaccine hesitancy refers to delay in acceptance or refusal of vaccination despite availability of vaccination services. ¹⁸ Vaccine hesitancy is complex and context specific, varying across time, place and specific vaccines. ¹⁸

There are few published studies that have explored reasons for COVID-19 vaccine uptake and vaccine hesitancy among people experiencing homelessness, and those published report mixed results. Of studies reporting higher vaccine hesitancy, a study in France with homeless shelter residents reported 40.9% were unwilling to get vaccinated, interpreted as vaccine hesitancy by the authors. 19 Factors associated with COVID-19 vaccine hesitancy included female sex, living with a partner, French citizenship/legal residence and low health literacy. In the USA, a study of 90 people experiencing homelessness found 48% hesitancy when participants were asked about both actual and hypothetical COVID-19 vaccination.²⁰ In the UK, Rogers and colleagues found 28.1% of homeless shelter residents were vaccine reluctant, with higher COVID-19 reluctance reported among Black participants.²¹

Other studies have noted COVID-19 vaccine confidence among people experiencing homelessness. Among a mixed group of elder people experiencing homelessness and people experiencing homelessness at a COVID-19 mobile testing site, a qualitative study in the USA found a general mix of willingness and hesitancy towards COVID-19 vaccination.²² While willingness was fuelled by a desire to return to normal life and civic responsibility, hesitancy was linked to a desire for vaccine trial data, worries of vaccine ingredients and mistrust of government institutions.²² In Canada, Abramovich and colleagues explored views towards the COVID-19 vaccine held by youth experiencing homelessness who identified as Two-spirit, Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, or additional sexual orientations and gender identities (2SLGBTQ+). 23 Their mixed-methods study found that 75% of participants felt the vaccine could stop the spread of COVID-19, 58% felt safe receiving the vaccine and 64% either were vaccinated or planned to be vaccinated. Reasons for vaccine hesitancy included mistrust in the healthcare system, lack of targeted vaccinerelated public health information, concerns of vaccine safety and side effects and accessibility issues. These initial studies present concerns for ongoing vaccine confidence and uptake among people experiencing homelessness. Yet, they predominantly quantify the factors associated with limited vaccine uptake and the major elements of hesitancy, with less focus paid to unpacking the connection between homelessness and vaccine hesitancy, nor do they attend to specific strategies to improve vaccine uptake. Further research is needed to elucidate the mechanisms that explain why people experiencing homelessness might hold aversions to vaccination or vaccination programmes, and reveal approaches suited to delivering a different outcome.

To understand COVID-19 infection rates among people experiencing homelessness in Toronto, the *Ku-gaa-gii pimitizi-win* cohort study (formerly the COVENANT study) aims to determine the incidence and prevalence of COVID-19 infection and uptake of COVID-19 vaccination among people experiencing homelessness living in congregate settings during a 12-month follow-up. To expand on and complement the *Ku-gaa-gii pimitizi-win* cohort study, we developed a qualitative study to provide in-depth understanding about COVID-19 vaccine uptake and hesitancy among people experiencing homelessness in Toronto, Canada.

Over 2 years into the pandemic, vaccination is still an important protection. Current public health guidelines recommend three doses of a COVID-19 vaccine for stronger protection against severe illness, with some populations recommended to take a fourth booster dose. 24 Vaccination is particularly important given how easily transmissible the new variants are, that many societal public health measures are being rescinded and, in Ontario, many congregate settings are moving back towards full capacity after having instated reduced capacity to enable physical distancing.

Thus, the goal of this study is to characterise reasons for COVID-19 vaccine uptake and hesitancy among people experiencing homelessness, to understand how homelessness and vaccine hesitancy might be intertwined and coproduced, to identify strategies to overcome hesitancy and to provide public health decision-makers with information to improve vaccine confidence and uptake in this priority population. These are critical to improving current vaccination programmes to protect against COVID-19, informing new approaches to improving vaccination rates among this priority population and informing responses to future public health crises.²⁵ 26

Specific aims and research questions

The specific aims of this qualitative study are to: (1) identify the individual, community and structural drivers of COVID-19 vaccine uptake and hesitancy among people experiencing homelessness; (2) invite people experiencing homelessness to propose solutions and strategies to reduce impediments to vaccination; and (3) develop strategies to build enablers to vaccine confidence and uptake.

We will achieve these aims by answering the following research questions: (1) How do people experiencing homelessness perceive the COVID-19 vaccine? What reasons do they give for confidence in and/or hesitancy of the COVID-19 vaccine? (2) What are the individual, community and structural enablers and barriers to vaccination for people experiencing homelessness? What steps do participants identify to reducing impediments to vaccination? (3) How do different contextual factors influence and shape views, attitudes and beliefs towards vaccination in general and the COVID-19 vaccine in particular?

METHODS AND ANALYSIS Setting and context

This study takes place in Toronto, a city on Treaty 13 territory in Ontario, Canada. More than 235 000 Canadians experience homelessness every year, 27 and in Toronto, Canada's largest city, approximately 7347 people experience homelessness on any given night.²⁸ People experiencing homelessness were identified as a priority population for the vaccine roll-out in Toronto, and vaccination in shelters began in March 2021. 29 Vaccination clinics have been coordinated by Shelter Support and Housing Administration (SSHA), a division at the City of Toronto that manages housing and homelessness services, and run by multiple community-based health providers such as Inner City Health Associates, Unity Health Toronto, Toronto Public Health and Anishnawbe Health Toronto.

Ku-gaa-gii pimitizi-win, which translates in English to life is always/forever moving, is a spirit name given in ceremony by Elder Dylan Courchene from Anishnawbe Health Toronto. This name reflects and honours the movement of homeless individuals across the land, the spirit and

growth of the land we are on, and the force that connects us all to the future.

Theoretical and methodological approach

This qualitative study will be informed by the ecosocial theory of health and health behaviour, focused on explaining social inequalities in health by tracking the social production of disease distribution, 30 31 and an intersectional approach to research.³² Qualitative inquiries are the 'best methods for capturing social responses to the pandemic', including reasons for people's behaviours and attitudes or beliefs around health and illness. 33 Using the ecosocial theory as a guiding framework will help identify the role of social structures or social environments in shaping participants' vaccination decisions, and ultimately shaping their risk of severe illness from COVID-19 if infected.³⁰ This approach will enable analytical insight into how social experiences can become embodied, contextualising vaccine decision-making within multiple levels of influence (interpersonal, community, national, etc). 30 34 Intersectionality 2 refers to the 'multiple, interdependent and mutually constitutive' relationships between social identities (eg, race, class, gender) and/or structural inequities (eg, underemployment, homelessness), creating synergistic experiences of oppression and opportunity.³⁵ ³⁶ The concept of intersectionality is an important and useful analytical frame for this study given the intersecting social identities of the homeless population in Toronto, experiences which could shape and influence peoples' perception of the vaccine (see participant details below). Combined, these theoretical lenses align with the grounding of this study, that homelessness is the result of intersecting economic and political failures and individual-level factors.³⁷ Such an approach will allow us to unpack the multilevel factors that produce both homelessness and vaccine hesitancy to better understand how the two are intertwined, and identify strategies to disentangle them.

Sampling and participant recruitment

This study will recruit up to 40 participants in Toronto who are identified as experiencing homelessness at the time of recruitment, selected from among individuals who have participated in the Ku-gaa-gii pimitizi-win cohort study, described elsewhere.³⁸ In general, qualitative research does not stipulate a specific number of participants required for a study. Given the diverse opinions towards the COVID-19 vaccine that we anticipate, we hypothesise 40 will be an adequate number to provide rich insights into the research questions,³⁹ allow for approximately equal representation of vaccinated and not vaccinated with similar demographic characteristics and adequately represent the diverse views and experiences of participants.

Participant sampling

We will use maximum variation sampling to help ensure a diverse sample based on demographic characteristics

 Table 1
 Stratified sample frame with target numbers to guide recruitment of potential participants

			Non-binary, Two-	
	Male	Female	Spirit, other identity	Total
Vaccinated* (n=20)				
White	2	2	3	7
Non-White	3	3	3	9
Indigenous	2	2	0†	4
Total	7	8	6	20
Not vaccinated (n=20)				
White	3	2	1‡	6
Non-White	3	3	1‡	7
Indigenous	3	3	1‡	7
Total	9	8	3	20

^{*}Vaccinated with at least one dose.

including gender and race/ethnicity, as well as vaccination status (vaccinated with at least one dose, not vaccinated). The *Ku-gaa-gii pimitizi-win* cohort study conducted an initial baseline survey from June 2021 to September 2021 that collected contact information, recorded sociodemographic characteristics and asked participants whether they had been vaccinated. For the *Ku-gaa-gii pimitizi-win* qualitative study, we have created a stratified frame from which to sample participants based on self-identified gender, self-identified race/ethnicity and self-reported vaccination status (vaccinated with at least one dose and not vaccinated) (see table 1).

Sampling participants based on gender, race/ethnicity and vaccination status will allow us to understand differences in vaccine confidence, uptake and hesitancy among these populations and/or similarities that cut across these variations.⁴⁰ Of the total people experiencing homelessness in Toronto, 63% identify as men, 34% as women and just over 3% as non-binary, transgender and Two-spirit.²⁸ Indigenous, Black and other racialised individuals are over-represented in Canada's homeless populations. 41 42 In Toronto, almost two-thirds (60%) of people experiencing homelessness identify as racialised (52% in the general population), with 31% identifying as Black (9% in general population). Furthermore, 15% identify as Indigenous (1%-2%) in the general population). Although Canada does not currently report race-based COVID-19 vaccination data, COVID-19 vaccination rates in the USA are lower among racialised communities.44 Racialised groups have historical and contemporary experiences of oppression by medical communities and therefore justifiable mistrust of healthcare systems. 26 45 46 Therefore, the Ku-gaa-gii pimitizi-win qualitative study will build on prior research with insight into reasons for vaccine uptake and

hesitancy among Indigenous, Black and other racialised communities. The unique concerns and healthcare needs of these groups of people experiencing homelessness are under-researched and this study will address this knowledge gap as it relates to the COVID-19 vaccine for people experiencing homelessness in Toronto.

Participant recruitment and consent

Recruitment is being supported by the *Ku-gaa-gii pimitizi-win* cohort research team with assistance from shelter staff at 61 physical distancing hotels and shelter programmes for youth (aged 16–24 years), adults and families experiencing homelessness in Toronto. Recruitment for the *Ku-gaa-gii pimitizi-win* qualitative study began in November 2021 and will continue on a rolling basis until all participant sampling categories are filled and/or thematic saturation is reached.

Multiple methods for participant recruitment are being employed simultaneously. First, individuals who fit within our sampling frame are contacted via telephone or email and invited to participate in the Ku-gaa-gii pimitizi-win qualitative study. As all potential participants for the qualitative study are sampled from the Ku-gaa-gii pimitizi-win cohort study, contact information has already been collected by the Kugaa-gii pimitizi-win cohort research team. Second, a qualitative research team member joins the Ku-gaa-gii pimitizi-win cohort research team at their interview sites and invites participants who fit the sampling frame to participate in the qualitative study that day or to schedule an interview on another day. Third, if we are unable to join the cohort study at interview sites, the Ku-gaa-gii pimitizi-win cohort research team passes a study contact card on to any participants who fit the sampling frame, inviting them to contact us for more information or interest in participating. Individuals indicating interest to participate are consented into the study (online supplemental file 1, consent form). Participants can withdraw from the study at any point during the interview and up until 2weeks after the interview, at which point the data will be deidentified and analysis will have begun on their transcript.

Data generation

Semistructured interviews with participants explore general experiences during the COVID-19 pandemic (eg, loss of housing, social connectedness), perceptions of the COVID-19 vaccine, enablers and challenges to vaccine uptake and strategies for supporting enablers and addressing challenges (see online supplemental file 2, interview guide). Two peer research assistants (PRA) with lived experience of homelessness have been hired onto the research team. In peer research, members of a target population are involved in the research process,⁴⁷ as research without lived experience may lack knowledge of the realities they are studying. 48 The emergence of peer research in recent decades recognises that knowledge rooted in experience is often devalued in dominant research and academic knowledge production, despite the wisdom, advice and learning that comes from specific

[†]This category of participant demographic does not exist in the COVENANT cohort participant sample.

[‡]Within the COVENANT cohort participant sample, there was only one individual who fit within this category.

COVENANT, COVID-19 Cohort Study of People Experiencing Homelessness in Toronto.



experiential standpoints. 49 50 In this study, the PRAs help bring to the fore 'hidden knowledges', 50 contributing to developing the interview guide, conducting interviews with participants, coanalysing the data and supporting the coordination of multiple knowledge translation activities. Their critical role in this research helps to contextualise, communicate and apply research findings.⁴⁸

Two researchers conduct each interview—one of the PRAs and either the research coordinator (TT) or the study lead ([IR]). Interviews are led by the PRA with additional follow-up questions asked by the second interviewer. Interviews can last up to 1.5 hours and participants are provided with a cash honorarium (\$C40) for participating. Field notes are taken of 'observational information or data during the interview, and nonlinguistic "data" such as bodily and facial expressions and non-verbal interactions'.⁵¹

Interviews are taking place both in person and virtually, on the telephone or video (eg, Zoom). Initially, all interviews were to be held in person, either in a private room at one of two different shelters in downtown Toronto, or in a private room at the shelter where participants are staying. For some participants, in-person interviews pose a barrier to participation for various reasons (eg, they have children they are looking after and can not travel, shelters are on COVID-19 outbreak status and we are unable to conduct interviews in their space, participants have mobility challenges and are unable to travel, or COVID-19 infection concerns). We offer individuals the option of conducting telephone or video interviews, and honoraria are sent via e-transfer.

Data analysis

As is common in qualitative research, data analysis began with the first interview and is continuing on a rolling basis, as interviews are completed. Interviews will be transcribed, read to familiarise ourselves with the entire data set, notable excerpts coded and similar codes grouped into themes.⁵² Field notes will be used as initial points of analysis and to contextualise interview data. Using the ecosocial theory as our theoretical lens, analysis will situate participant responses within intrapersonal/individual, interpersonal/network (eg, social networks), community/area (eg, organisations, geographic area), institutional and public policy levels, contextualising individual experiences within their broader environments. 53 54 Central to our analysis will be ecosocial theory's core constructs of embodiment (the biological manifestation of one's material and social context) and pathways of embodiment (how this occurs, for instance, through social trauma), as played out over the life course.⁵⁴ Attention will be paid to the critical role individual and structural accountability and agency play in shaping vaccine uptake and hesitancy and homelessness.⁵⁴ Analysis will also examine the ways in which sex, gender, race and other intersecting factors (eg, age, ethnicity, culture, religion, geography, education, disability, income and sexual orientation) shape the experiences of participants during

the COVID-19 pandemic and their perceptions towards the COVID-19 vaccine.

The first five transcripts will be coded together by JIRJ, TT, and the two PRAs. The next stages of coding and thematic analysis are being conducted by JIRJ and TT independently. Initial codes and themes will then be reviewed together to address discrepancies in interpretation, and then reviewed with the PRAs. Results will be synthesised in collaboration with PRAs, then reviewed with the Community Expert Group (CEG) at MAP Centre for Urban Health Solutions as a form of member checking (see the Patient and public involvement section). Data source triangulation (eg, analysing field notes and interview data) and researcher triangulation will enhance reliability of the findings.

In line with the First Nations Principles of Ownership, Control, Access and Possession, data of Indigenous participants are possessed and owned by Anishnawbe Health Toronto and data analysis that is focused on Indigenous study participants will be led by Anishnawbe Health Toronto.

Limitations

This study has important limitations. We are only recruiting individuals who participated in the Ku-gaa-gii *pimitizi-win* cohort study—a study that is recruiting participants from within the shelter system and encampments. As a result, our qualitative study will not include individuals living on the street at the time of recruitment, nor anyone else who may be experiencing homelessness but who is not staying in shelters, COVID-19 hotels or encampments. Furthermore, participant recruitment for the Ku-gaa-gii pimitizi-win qualitative study began 2.5 months after the completion of the baseline surveys for the Ku-gaa-gii pimitizi-win cohort. While the Survey Research Unit (SRU) team working on the Ku-gaa-gii pimitizi-win cohort study actively attempts to maintain contact with participants, there are many lost to follow-up and who were therefore unable to be reached to participate in this qualitative study. Some of the hardest to reach individuals may also experience intense social exclusion and isolation, and face high barriers to accessing healthcare, such as vaccination, and therefore represent important perspectives that will not necessarily be captured in this study.⁵⁵ Additionally, the study is rooted in and coordinated by a hospital-based research team and therefore we may miss individuals with a distrust of research, institutions and healthcare who may have refused to participate in the Ku-gaa-gii pimitizi-win cohort study. Lastly, this study is set in Toronto, a city on Treaty 13 territory, a single urban area which may limit its transferability to other cities or rural areas, where there may have been different approaches to the COVID-19 vaccine roll-out.

ETHICS AND REGULATORY ASPECTS Ethics and dissemination

Approval for this study has been granted by Unity Health Toronto Research Ethics Board. Findings will be rapidly



communicated to groups organising vaccination efforts in shelters (Ontario Health Toronto Region, Toronto Public Health, Inner City Health Associates, Unity Health Toronto, etc), community groups (Anishnawbe Health Toronto), Toronto Shelter Network and SSHA (City of Toronto) to construct more targeted interventions and strategies that address reasons for vaccine hesitancy among people experiencing homelessness. Key outputs will include a community report, academic publications, presentations at conferences and a Town Hall that will bring together people with lived expertise of homelessness, shelter staff, leading scholars, community experts and public health partners to discuss study findings.

Data protection and retention

Interviews are recorded using an audio recorder and uploaded to an encrypted USB. Once collected, the data are kept on the encrypted USB and securely sent and stored at St Michael's Hospital on a secure computer server, and deleted from the audio recorder. Audio recordings will be transcribed by a professional transcription service. Audio recordings of the interviews will be password protected and sent to the transcription company via the Unity Health secure online file transfer system—File Transfer. The transcriber will be directed to remove any identifying information (eg, names, specific places), and an authorised member of the research team will review all transcripts to check for outstanding identifying information, removing anything that could identify participants. No identifying information will be used in data analysis, publications and/or presentations. Individuals will be given a participant ID, and this will be stored with contact information on a master linking log, in a password-protected St Michael's Hospital computer. Once data analysis is complete, data will be deleted from the encrypted USB and only stored at St Michael's Hospital on a secure password-protected computer server in password-protected files. Data will be stored for 10 years after study completion and then destroyed.

Patient and public involvement

The study concept, design and interview guides were all reviewed by the CEG at MAP Centre for Urban Health Solutions. The CEG is made up of a diverse group of individuals with lived experience of homelessness. The CEG will also provide guidance and input on study findings and knowledge translation and exchange. As a permanent part of the team at MAP, members are compensated for their time. The study also has important collaborators who reviewed the proposal. These include the City of Toronto (SSHA), the Canadian Alliance to End Homelessness, the Women's National Housing and Homelessness Network (WNHHN) and Anishnawbe Health Toronto. The WNHHN has convened a working group to focus on this study and has provided guidance on the interview guide and will provide guidance on data analysis. Anishnawbe Health Toronto has provided guidance on the research focus and questions, will collaborate on

data analysis of the entire data set and lead analysis of the data generated with Indigenous participants.

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Contributors JIRJ conceived this study. JIRJ and RS led the study design with assistance from EG, ML, RN, NT, AO, CP, OS and SWH. JIRJ, RS, EG, JK and NT developed the interview guides. CP and OS helped with participant recruitment. JIRJ, TT, AD and FC are conducting ongoing data collection and analysis, with guidance from LR, TK, NT, AO and SWH. All authors contributed to refinement of the study protocol. JIRJ drafted the manuscript, and all authors reviewed, provided input and approved the final manuscript.

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Author note To guide this work, a spirit name was given in ceremony by Elder Dylan Courchene from Anishnawbe Health Toronto. Ku-gaa-gii pimitizi-win, which translates in English to life is always/forever moving, reflects and honours the movement of homeless individuals across the land, the spirit and growth of the land we are on, and the force that connects us all into the future.

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