

Describing Alberta Emergency Shelter Policies and Practices that Impact Clients' Diabetes Management: A Mixed-Methods Environmental Scan

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Describing Alberta Emergency Shelter Policies and Practices that Impact Clients' Diabetes Management

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Abstract

Background: Diabetes is a common chronic condition that can lead to negative health outcomes, especially among people experiencing homelessness (PEH) who face significant barriers to self-management of the condition. The shelter environment specifically poses challenges, as policies and practices influence food options, medication storage and administration, and overall access to healthcare services.

Methods: To understand shelter-level policies and practices in Alberta, Canada, we conducted an exploratory sequential mixed-methods environmental scan. The first phase consisted of semi-structured interviews with shelter staff, which were analyzed using thematic analysis. The second phase was accomplished using broad dissemination of tailored surveys to shelter management, frontline staff, and kitchen staff in each shelter in the province. Data integration at the methods level used a building approach, whereas integration at the interpretation and reporting level followed a narrative strategy.

Results: Twenty-eight of twenty-nine identified emergency shelters in Alberta participated (n=50 respondents: 27 management, 16 frontline staff, 7 kitchen staff). In addition, six semi-structured interviews were conducted with shelter staff. The thematic analysis yielded three overarching themes: (1) shelter staff have some ability to identify clients with diabetes; however, overall low knowledge of diabetes is a barrier to acting on this awareness, (2) shelter staff have limitations in their scope of practice, which contributes to current limitations in providing diabetes care in the shelter setting, and (3) current shelter services may meet some needs of those with diabetes, but cannot be adapted or expanded without further funding.

Conclusion: This study highlights gaps in diabetes education among shelter staff and shows the need for clinical or allied health supports within the shelter setting. Without significant budgetary and resource changes within shelters, the policies and practices that impact individuals' ability to manage their diabetes within shelters will persist.

Keywords: diabetes, homelessness, emergency shelter, mixed-methods

Background

Diabetes is a chronic and common condition that poses numerous challenges to the health and overall quality of life of affected individuals. As of 2024, 398,440 people in Alberta, Canada, were living with diabetes, with an estimated cost of \$556 million to the healthcare system.¹ A major driver of these costs is the burden of complications, such as cardiovascular disease, diabetic retinopathy, kidney failure, neuropathy and foot infections, that arise when diabetes is not well managed.^{2,3} To prevent these complications and their associated costs, active and comprehensive diabetes self-management is essential. This includes dietary modifications, regular physical activity, routine self-monitoring of blood glucose levels, use of medications such as insulin or oral antihyperglycemic agents, and regular visits with diabetes specialty care practitioners, including endocrinologists and certified diabetes educators.^{4,5}

In line with overall trends among individuals who are housed, the rates of diabetes among people experiencing homelessness (PEH) have risen in recent decades.^{6,7} These statistics, however, fail to represent the number of cases that remain undiagnosed; in a recent study of PEH in shelter environments in Calgary, Alberta, it was found that over one-sixth of the participants were living with undiagnosed dysglycemia, suggesting an even greater prevalence of diabetes.⁸ Even when fully recognized and diagnosed, effective management of the condition among PEH is made difficult due to unstable housing, financial challenges, lack of access to healthy foods and medication, lack of social connections, and even personal safety concerns.⁹ These barriers to effective management result in a greater risk of diabetes-related complications, including the development of cardiovascular disease, which has been shown to be a leading cause of death among PEH.¹⁰ A recent study showed a strong association between homelessness and higher rates of diabetes-related cardiovascular complications such as myocardial infarction, stroke, heart

failure, and peripheral arterial disease.¹¹ Similarly, in another study looking at diabetic retinopathy, it was found that PEH undergo screening less frequently, preventing early detection of the condition and making treatment more difficult.¹²

One of the primary environments where PEH reside are emergency shelters, which are defined as a temporary housing model where PEH can find a place to stay overnight.¹³ Although they provide a critical safety net, these environments often lack privacy and autonomy, as the spaces are typically communal and clients have little control over the policies and daily conditions within the shelter.¹³ This absence of control and stability reflects gaps in key social determinants of health such as safety, social support, and sense of agency.^{14,15} When these social determinants of health are undervalued, a disconnect emerges between the services shelters provide and the broader needs of their clients.¹⁶ According to the UN Centre for Human Settlements, adequate shelter requires more than four walls and a roof; it should also include privacy, space, sanitation, and suitable health-related factors.^{17,18} Housing therefore refers primarily to the physical structure, whereas the concept of *home* encompasses deeper elements such as control, permanence, and continuity, dimensions that are considerably lacking in most shelter environments.¹⁷ As a result, while shelters may address basic physical needs, they often fail to meet psychosocial needs that align more closely with the notion of home.

Emergency shelters have traditionally been expected to meet basic necessities, as outlined by the Institute of Medicine (now the National Academy of Medicine) in its report *Homelessness, Health, and Human Needs*.¹⁹ These essentials include safe overnight shelter, food, and hygiene facilities. While such provisions are vital, evidence shows that shelters offering additional supports, particularly informal social supports and relationship-building, are more effective in helping PEH address the underlying problems that contribute to their homelessness.²⁰

The shelter environment significantly impacts the management of diabetes, particularly with respect to diet and policies governing daily life. Food provided in shelters is often not ideal for diabetes self-management, as meals tend to be high in refined carbohydrates and sugars, with limited options for balanced or specialized diets.²¹ In many shelters, policies limit dietary autonomy: meals are typically standardized, and while accommodations may sometimes be made for severe allergies, religious requirements, or vegetarian preferences, adjustments for diabetes-specific needs are rarely available.²² Beyond diet, other structural barriers in shelters complicate diabetes self-management. These include the lack of clean, private spaces to administer insulin, difficulties with storing insulin at appropriate temperatures, and challenges in replacing essential diabetes supplies such as glucometers and medications when they are lost or stolen.²² The instability of shelter living also disrupts routines that are essential for chronic disease management. While PEH often accumulate significant daily steps through walking, this activity is usually incidental and is not a substitute for structured forms of exercise providing moderate-to-vigorous levels of activity, which are particularly beneficial for glucose control.²² Without the foundation of a stable home, diabetes self-management becomes increasingly challenging.²²

The objective of this study was to examine the policies and practices that influence the care and management of diabetes among residents experiencing homelessness within emergency shelters in Alberta, Canada.

Methods

Study Design

We conducted an exploratory sequential mixed-methods environmental scan to describe policies and practices in Alberta emergency shelters that may impact clients' diabetes care and self-

management. The study was developed and conducted in collaboration with the Calgary Diabetes Advocacy Committee (CDAC), a community-based participatory research (CBPR) group composed of individuals with lived experience of diabetes and homelessness, to enhance the credibility and relevance of the findings.²³ Qualitative interviews with shelter staff informed the development of three structured surveys (tailored to management, frontline staff, and kitchen/food services staff), which were subsequently administered across the province among emergency shelter staff. This research received ethics approval from the University of Calgary's Conjoint Health Research Ethics Board (REB23-0854).

Phase 1: Qualitative Interviews

Sampling and Recruitment

To inform the development of subsequent quantitative surveys, we used convenience sampling to recruit frontline staff from adult emergency shelters in Calgary using a combination of convenience and snowball sampling. Recruitment posters were placed in accessible provider-facing areas within shelters and included study details and contact information. Interested individuals who contacted the study team were screened to confirm their role and ensure relevant frontline experience. Following their participation, individuals were invited to share the recruitment poster with colleagues to support further recruitment.

Data Collection

Semi-structured interviews were conducted by members of the study team (S.T., E.K.G., or D.J.T.C.) and co-researchers from the CDAC (J.A., M.L., and A.W.) with frontline shelter staff, either in person or via Zoom, depending on participant preference. Informed consent was obtained either orally or in writing, aligned with the interview modality and approved ethics

procedures. An interview guide (online supplementary materials) was used to explore participants' knowledge, attitudes, and behaviours or practices related to the identification and management of diabetes symptoms and the self-management among clients within their shelter. The guide was informed by the Knowledge, Attitudes, and Behaviors (KAB) theoretical model of health education, which posits that increased knowledge influences attitudes, which in turn shape behavior.^{24,25} In this context, it was assumed that the shelter staff's knowledge of diabetes informed their attitudes toward the condition, which subsequently impacted how they responded to and supported clients with diabetes.^{24,25}

Data Analysis

All recorded interviews were transcribed verbatim and uploaded to NVivo (Lumivero, Denver, USA), a qualitative data analysis software used to support data organization and coding. Thematic analysis was conducted following the six-phase framework outlined by Braun and Clarke.²⁶ Initial open coding was inductive, and independently conducted by three members of the study team, all trained in qualitative research methods (P.D., P.M.G., H.Y.). Focused coding was then performed by a single team member (H.Y.) to refine and consolidate emergent themes. Upon completion of the focused coding, themes were reviewed by individuals from the CDAC (J.A., M.L., A.W.).

Phase 2: Quantitative Surveys

Sampling and Recruitment

Using the Government of Canada's definition of an emergency shelter, which is a facility providing temporary, short-term accommodation for individuals and/or families experiencing homelessness,²⁷ we compiled a list of 29 emergency shelters located within Alberta. The contact

information for these shelters was obtained through 211 Alberta,²⁸ which is a central publicly-accessible repository for individuals in Alberta to connect to various community and social services. This use of 211 Alberta ensured that the information gathered was both accurate and up to date. For the quantitative phase, we employed census sampling, aiming to include all emergency shelters in Alberta, inclusive of those providing care specifically to youth, women, families, and other distinct populations. Once the study team had a comprehensive list of emergency housing shelters in Alberta (online supplementary materials), the study team reached out to each shelter via telephone. During these calls, we invited three staff members from each shelter to participate in the survey: one from management, one frontline worker, and one kitchen/food services staff member. This approach was designed to capture a broad perspective on diabetes-specific knowledge and training within shelters across Alberta. In instances where the research staff were unable to contact individuals in the three designated roles, we employed snowball sampling. This method involved asking initial contacts within the shelters to recommend or facilitate contact with the appropriate colleagues, striving to have all three surveys completed by different staff members as intended. During the initial contact phase, some shelters indicated that they had transitioned from an emergency shelter to another form of shelter, as defined by the Government of Canada (e.g. transitional housing).²⁷ If this was the case, these shelters were subsequently removed from the sampling frame to maintain the focus on emergency shelters.

Data Collection

Data was collected through three surveys, specifically tailored for distinct groups: management, frontline, and kitchen/food services personnel (online supplementary materials). Data collection was carried out using two primary methods to accommodate participants' preferences and

schedules: (1) the research staff either phoned the participant to complete the survey in a direct manner over the phone, or (2) participants were emailed a link to the online survey to complete at a convenient time of their choosing. This flexibility in data collection methods aimed to maximize response rates and ensure participants could provide thoughtful and thorough responses. Regardless of the method, informed consent was obtained either orally during phone surveys or as written consent for online surveys. All oral surveys were administered by members of the study team (T.R. and C.P.) and responses were recorded directly into a custom-built Qualtrics questionnaire and stored on a secure university server. The questionnaire included many open-ended questions and the responses provided to these questions were recorded verbatim.

Data Analysis

Quantitative data were analyzed using descriptive statistics, and summary tables were created to characterize the sample and survey responses. Stratified analyses were not conducted due to the small numbers of responses within key subgroups.

Phase 3: Integration

This study integrated qualitative and quantitative data at three key stages common to mixed-methods designs:²⁹ the design level, the methods level, and the interpretation and reporting level (Figure 1). At the design level, the study followed an exploratory sequential mixed-methods design. In this approach, qualitative data were collected and analyzed first to inform the subsequent development of the quantitative component. At the methods level, integration was achieved using the building approach, where findings from the qualitative phase directly informed the procedures and content of the quantitative phase.²⁹ Specifically, themes generated

through the initial qualitative thematic analysis were used to guide the construction and development of the survey questions. At the interpretation and reporting level, we employed a narrative integration strategy, presenting both qualitative and quantitative findings to create a comprehensive and meaningful understanding of the phenomenon under investigation.²⁹ Additionally, we used a weaving approach, organizing the presentation of results by theme and integrating both data types within each thematic area to provide a comprehensive understanding of the findings.

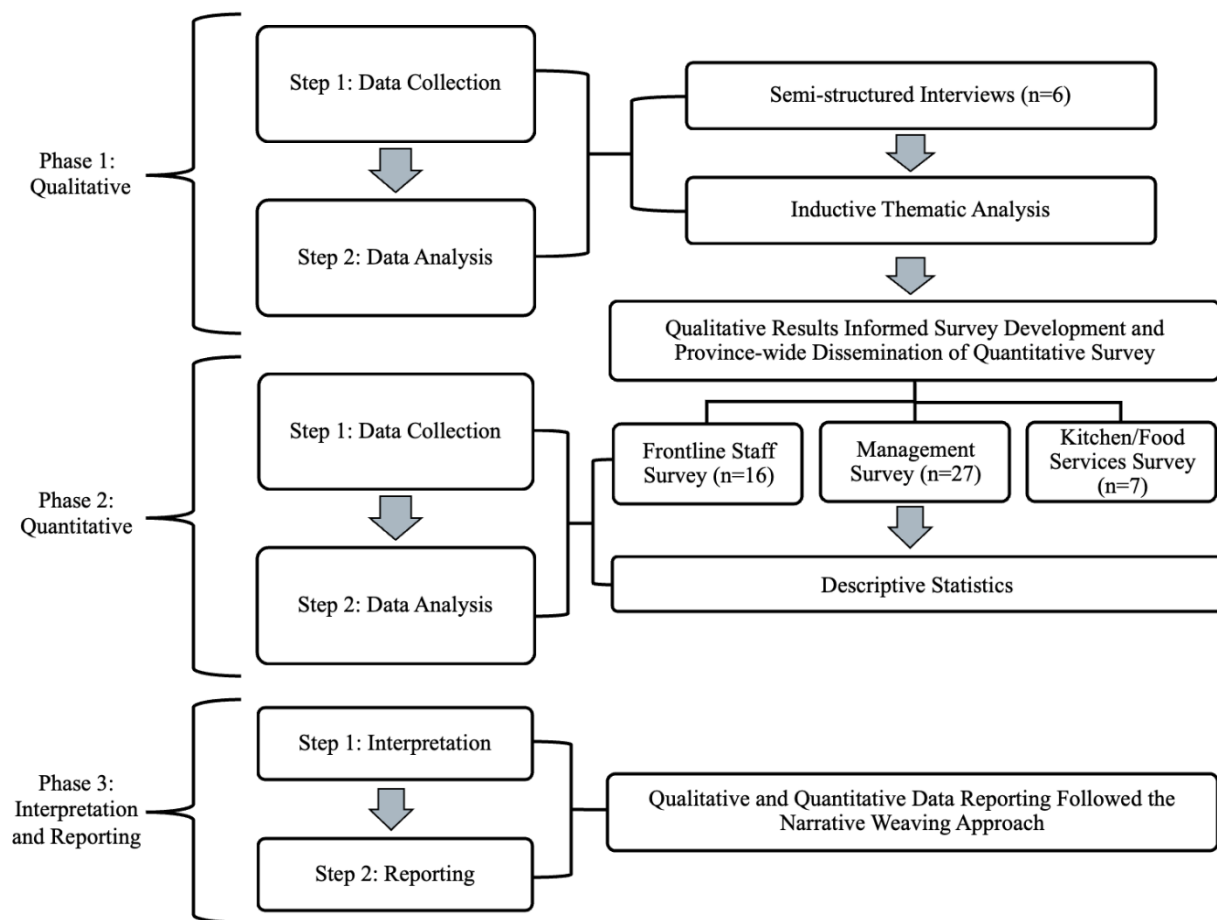


Figure 1. Schematic outlining the mixed-methods processes incorporated throughout the study.

Results

Qualitative data collection occurred in 2022 and consisted of six semi-structured interviews with shelter staff (duration: 32 – 54 minutes), including interviews with three frontline shelter staff, two case workers/resource specialists and one program team lead. Given the sample size of the qualitative portion of the study, to ensure the confidentiality we are unable to report the demographics of these individuals.

Of the 29 emergency housing shelters initially identified, survey responses were received from 28 unique facilities. While some shelters provided respondents for all three targeted surveys (management, frontline staff, and kitchen staff), others completed only one or two. This variability was partly due to operational constraints, particularly among smaller shelters, where staff often fulfill multiple roles, such as management, frontline work, and food preparation, without dedicated personnel for each duty. In total, 50 individual survey responses from shelter staff were collected: 27 representing management perspectives, 16 from frontline staff, and 7 from kitchen personnel. Table 1 describes the quantitative sample.

Table 1. Characteristics of the Quantitative Survey Respondents

Characteristic	Management	Frontline	Kitchen Staff
N	27	16	7
Age			
<25 years	0 (0.0)	5 (31.3)	0 (0.0)
25-34 years	15 (55.6)	4 (25.00)	3 (42.9)
35-44 years	3 (11.1)	3 (18.8)	2 (28.6)
45-54 years	3 (11.1)	3 (18.8)	2 (28.6)
>55 years	5 (18.5)	1 (6.3)	0 (0.0)
Prefer not to say	1 (3.7)	0 (0.0)	0 (0.0)
Sex			
Female	19 (70.4)	14 (87.5)	4 (57.2)
Male	5 (18.5)	2 (12.5)	3 (42.9)
Non-binary	1 (3.7)	0 (0.0)	0 (0.0)
Prefer not to say	2 (7.4)	0 (0.0)	0 (0.0)

Educational Attainment

High school graduation	4 (14.8)	3 (18.8)	1 (14.3)
One-year program at a university, college, or other institute	1 (3.7)	1 (6.3)	1 (14.3)
Two-year program at a university, college, or other institute	2 (7.4)	1 (6.3)	2 (28.6)
Bachelor's degree	14 (51.9)	7 (43.8)	3 (42.9)
Master's or professional degree	5 (18.5)	4 (25.0)	0 (0.0)
Prefer not to say	1 (3.70)	0 (0.0)	0 (0.0)

Years Working at Current Shelter, median (IQR)

4.0 (2.0, 6.0) 1.54 (1.2, 5.0) 3.0 (0.3, 7.0)

Years Worked in the Homeless-serving Sector, median (IQR)

6.0 (5.0, 15.8) 2.0 (1.5, 5.0) 3.0 (0.3, 7.0)

Values are n (%), unless otherwise specified & percentages may not sum to 100 due to rounding.

Survey responses were geographically distributed among shelter staff across all major urban centers in Alberta, with the exception of the city of Lethbridge. Additionally, shelters located in smaller municipalities, such as Strathmore and Leduc, also participated, contributing to a comprehensive understanding of emergency shelter operations across the province.

The qualitative phase of this study surfaced three central themes related to shelter-based diabetes care: (1) shelter staff have some ability to identify clients with diabetes; however overall low knowledge of diabetes is a barrier to acting on this awareness, (2) shelter staff have limitations in their scope of practice which contributes to current limitations in providing diabetes care in the shelter setting, and (3) current shelter services may meet some needs of those with diabetes but cannot be adapted or expanded without further funding. The following section presents each theme alongside relevant quantitative findings.

Theme 1: Staff have some ability to identify clients with diabetes; however, overall low knowledge of diabetes is a barrier to acting on this awareness.

Amongst the staff we spoke to, the ability to identify clients with diabetes was variable. Most staff had knowledge of at least one symptom, sign, or sequelae of diabetes based on their prior

experience, which they believed would allow them to informally identify clients with diabetes. For example, participants accurately described features of diabetes such as frequent urination or thirst, slow wound healing or special wound care needs, and vision problems. As one participant commented:

“I think one of them had issues with a kind of a wound and this wound took time to heal, it took longer. It required really special attention, not just the normal wound care that our agency provides under the medical office. It required special attention. And I remember he was taken to hospital.” (Participant 3)

When asked about training provided to frontline staff, the majority of shelters reportedly offered limited or no formal training in identifying diabetes-related emergencies. Specifically, 58% of shelter staff indicated that they had received *no training* in identifying signs of low blood sugars (hypoglycemia), with only one staff member reporting having received *extensive* training in this area (Table 2). Similarly, training on identifying signs of high blood sugars (hyperglycemia) was also lacking, with 60% of shelter staff reporting that they had received *no training* in identifying signs of hyperglycemia, and no staff members reporting that they had received *extensive training* (Table 2).

In addition to informal identification based on observed dysglycemia-related symptoms, some staff described formal mechanisms used within their shelter to identify clients with diabetes. These included the use of centralized intake processes where clients were asked to disclose any pre-existing health conditions. As one provider explained:

“We have our database for every client, and it’s protected. During intake, our first question is regarding the health issues, and we have all [that] data’s, how many clients here and their data are all recorded and we, and we have access [at] any time. So yeah, we have the record.” (Participant 5)

These qualitative accounts were echoed within the survey findings, with 76% of respondents reporting that their shelter had a formal process to ask clients about medical history, and 78% indicated that there was a system in place to formally record client health conditions (Table 2). However, the presence of a formal system in recording health conditions, such as diabetes, did not necessarily translate into ability to provide appropriate diabetes-related support. Despite being able to document, and in theory, identify clients affected by diabetes, staff described feeling unable to act on this knowledge due to gaps in their own understanding of diabetes:

“I feel like my level of knowledge about diabetes is not where it could be to properly support [individuals with diabetes].” (Participant 1)

Table 2. Staff training and formal mechanisms for identifying clients with diabetes.

Survey Item	Response Options	n (%)
Identifying hypoglycemia (low blood sugar)	No training	28 (58)
	Little training	9 (19)
	Some training	10 (21)
	Extensive training	1 (2)
Identifying hyperglycemia (high blood sugar)	No training	29 (60)
	Little training	11 (23)
	Some training	8 (17)
	Extensive training	0 (0)
Treating high or low blood sugars	No training	23 (49)
	Little training	12 (26)

	Some training	11 (23)
	Extensive training	1 (2)
Inquire about client medical history	Yes	37 (76)
	No	12 (24)
Record client health conditions	Yes	38 (78)
	No	11 (22)

Theme 2: Shelter staff have limitations in their scope of practice, which contributes to current limitations in providing diabetes care in the shelter setting.

Shelter staff highlighted the non-medical nature of their positions, and many noted that they lacked the specific training or expertise to be able to engage with diabetes care. For example, one participant commented:

“We can't provide [and] we're not trained to give medication. We only help, only remind them. So, we cannot make recommendations. We cannot prescribe; we cannot diagnose. Outside that, I don't think we want to make any prescription and all that, we are not ready to do that. We cannot also recommend food for them. Like what is available is what we're going to give to them. It's the challenge.” (Participant 2)

Quantitative findings reflected these limitations in staffing and scope: only 45% of shelters reported having nurses embedded within their organizations, and even fewer had access to physicians (Table 3). While a small number of shelters described well-resourced clinical teams, including registered nurses, licensed practical nurses, case managers, and healthcare aides, many relied entirely on external services to provide medical support. Some participants described that while they may have knowledge or expertise from their own personal experiences, the policies

within their organization and the scope of their role prevented them from applying this knowledge to address diabetes-related concerns. For example, one participant commented:

“Even if I know how to do it, I can't do it at work because it's not my, that is not my area. We have a nurse; we have a health professionals that can do all that jazz.” (Participant 2)

We spoke specifically with staff about their ability to check point-of-care blood glucose levels. Some participants expressed interest in expanding their scope of practice to include this skill, drawing comparisons to their training in administering naloxone in response to opioid overdoses. However, others felt that blood glucose monitoring was a medical task that should remain within the domain of trained healthcare professionals, even if shelters had no medical personnel. Some of the concerns raised were about safety, infection control, risk of needlestick injury, and time constraints. As one participant explained:

“So, because it's not safe, you have to do it in a safe way. You have to be always carefully with like testing people. Like you have to change the needles and the strips. So, it's not a generalized thing. My recommendation is like in a proper staff, training somebody who come for once in a while to do it or because our staff will be busy and I don't know how, how effective it works.” (Participant 4)

These concerns align with survey findings; 65% of shelter staff reported having *no training* in blood glucose testing, and the remainder (35%) reported having *little* or *some* training in this area (Table 3).

Table 3. Staff training in blood glucose testing and availability of embedded nursing staff in Alberta emergency shelters.

Survey Item	Response Options	n (%)
Blood glucose testing	No training	31 (65)
	Little training	8 (16)
	Some training	9 (19)
	Extensive training	0 (0)
Nurses within organization	Yes	22 (45)
	No	27 (55)

Theme 3: Current shelter services may meet some needs of those with diabetes but cannot be adapted or expanded without further funding.

With respect to health services, most programs endorsed having a system to perform regular general wellness checks on their clients to screen for acute issues, but most programs described that the response to any health-related concern would be to rely on external Emergency Medical Services (EMS) for further assistance. As such, one participant noted:

“I think if things get very bad where we just get concerned for their health, if it is neglected or maybe they haven't got their medication and they haven't really disclosed that, um, it would be getting the EMS in, making that call to 911.” (Participant 6)

With respect to food and nutrition, many shelters described efforts to support individuals with diabetes by offering snacks outside of standard mealtimes:

398 *“Those of them that have diabetes, they need food, they need food every time. We have*
399 *special regimen for them. Even if they take their breakfast, lunch, and so, or dinner, we*
400 *still make a little provision like snack, so that anytime they want to take their medication,*
401 *they come for it.” (Participant 2)*

402 Seventy percent of surveyed shelter staff reported having snacks and/or sugar-sweetened drinks
403 available to clients 24/7 – which is necessary for those experiencing hypoglycemia. Additionally,
404 some shelters have the capacity to tailor meals to meet the dietary needs of individuals living
405 with diabetes. Specifically, some programs with on-site kitchens reported being able to
406 accommodate special requests at intake. As one participant shared:

407 *“During intake time, we ask them, ‘Do you have any diet concerns?’ If they're saying,*
408 *‘Okay, I'm diabetic and I cannot use much sugar,’ we have a database and we can record*
409 *that this client is diabetic and doesn't want much sugar. The kitchen staff sees our notes,*
410 *and they can provide food accordingly.” (Participant 4)*

411 This level of accommodation was not universal, with only 43% of shelter staff reporting that
412 their programs provided diabetes-friendly meals (Table 4).

413 Lastly, policies around medication management emerged as an area that could potentially
414 support clients with diabetes, given the importance of timely and consistent medication practices
415 for effective self-management. Several organizations have policies in place for medication
416 storage and administration, some mandatory, while others are offered as optional services based
417 on client preference:

“It's up to them [individual client]. Some say, okay, I want to keep it with myself, if they know they can keep it, some of them, oh we want, we want to keep it here. The one that require to be refrigerated [insulin], the one that we need to put in the fridge, we put it in the fridge for them.” (Participant 2)

This level of autonomy was not widely reflected in the survey findings. Only 7% of respondents reported that clients could independently access their stored medications, while the remaining 93% indicated that clients must rely on staff for access (Table 4). Although staff acknowledged the importance of expanding or adapting medication-related services to better support people with diabetes, many noted that doing so would not be feasible without additional funding:

“We don't have enough resources to manage diabetes in the shelter. Where I work. We don't.” (Participant 3)

Table 4. Shelter resources and services relevant to diabetes management.

Survey Item	Response Options	n (%)
Diabetes friendly meals	Yes	16 (43)
	No	21 (57)
Independent access to medication and supplies	Yes	3 (7)
	No	40 (93)
General snacks at all times	Yes	35 (70)
	No	15 (30)

Discussion

Our study revealed notable gaps in diabetes care knowledge and resources among emergency shelter staff in Alberta, Canada. Consistent with international findings, shelter staff often lacked specialized training for supporting clients with diabetes. For example, studies from the United

Kingdom have shown that most frontline staff in homeless services report little or no prior education in diabetes care, limiting their ability to respond to residents' health needs.³⁰ Similarly, while staff in our study could sometimes identify diabetes by observing symptoms or through intake questionnaires, many felt unprepared to act on this knowledge. These challenges mirror a broader body of literature documenting that people experiencing homelessness face difficulties in managing diabetes due to environmental and structural barriers, including limited access to appropriate food, safe storage of medications and supplies, and inconsistent healthcare access. Together, these findings underscore the importance of targeted education and organizational supports so that shelters and their staff members can better translate the identification of diabetes into meaningful action for clients.

Knowledge and Identification of Diabetes

Shelter staff within our study described some informal and formal methods for identifying clients with diabetes, but limited expertise impaired follow-up. Most programs ask about health history at intake (76% reported formal medical-history screening), yet 58-60% of staff had no training in recognizing signs of hypo- or hyperglycemia. As a result, staff may notice warning signs of diabetes (for example, slow-healing wounds, noted by Participant 3) but lack the confidence to meaningfully support patients. Our results suggest that even when shelters record health conditions, shelter staff lack the knowledge to act on them. Strengthening identification practices represents an important first step. This requires systematic screening combined with staff education, as recommended in adapted guidelines that call for coordinated chronic disease screening in homeless services to detect health complications early.³¹ Though the direct impact of intake screening on diabetes outcomes is not well-studied, other models have shown that

bringing screening into emergency shelters greatly increases case-finding and dramatically raised completion of indicated diabetes-related tests.³² In short, while many shelters do screen clients, our findings and existing literature suggest that without accompanying staff training or dedicated programming, identification of diabetes does not translate into effective support.

Scope of Practice and Staff Training

Shelter staff within our study consistently viewed medical management as outside their roles, citing both scope-of-practice restrictions and limited resources. Even relatively simple procedures, such as finger-stick blood glucose testing, were generally seen as beyond their scope, despite the fact that staff had been trained to carry out other health-related tasks like administering naloxone for opioid overdoses. This perspective reflects barriers documented in other studies, where providers have reported that strict limits on staff roles, combined with inadequate staffing due to a lack of funding, make it difficult to deliver diabetes care within the homeless-serving sector.³³ Only 45% of Alberta shelters reported having an embedded nurse, and very few had access to on-site physicians. As a result, serious health events were typically managed by through EMS. While EMS involvement is sometimes necessary, relying solely on ambulances can delay timely care, which is particularly alarming for conditions such as hypoglycemia that require immediate attention. Some shelter staff suggested that training in point-of-care glucose testing could enable them to respond more quickly, while others cautioned that glucose testing could pose safety and infection-control risks without clear protocols and adequate training. This tension highlights that any expansion of staff responsibilities, specifically towards the management of diabetes within shelters, would need to be accompanied by robust training, support, safeguards, and resources. Similar findings have been reported in other studies.

A Canadian study identified lack of staff resources and training as the main barrier to diabetes care in homeless settings.³³ Shelter staff across five Canadian cities recommended integrating allied health professionals, such as nurses, dietitians, or diabetes educators, into community settings, and increasing outreach capabilities.³³ In the UK, clinicians emphasized outreach, specialist partnerships, and staff education as effective strategies.³⁰ Across contexts, the common solution to diabetes care within the homeless serving sector has been expanding education, and embedding trained healthcare personnel to bridge gaps in routine diabetes care.

Shelter Services, Resources, and Funding

Shelter services currently only partially meet diabetes needs, constrained by funding and infrastructure. A large number of shelter staff surveyed (70%) reported that their shelter offers general snacks at all times, and some could note dietary restrictions, but few (43%) reported providing truly diabetes-friendly meals. One shelter staff noted that they ‘make a little provision’ for clients with diabetes, yet most could only accommodate preferences for reduced sugar rather than deliver fully tailored nutrition. This echoes findings from the literature that shelter food environments often impede diabetes self-management.³⁴ Many shelters have clear medication-storage policies; 93% of respondents stated that clients must rely on staff to access their medications. This lack of client autonomy likely complicates consistent, and timely medication use.

Financial constraints were widely acknowledged by shelter staff, who stressed that expanding diabetes supports would only be possible with additional funding. As Participant 3 explained, shelters simply do not have the resources to provide services that meaningfully support diabetes

self-management within their settings. This view is consistent with broader evidence, which identifies limited funding as a major barrier to comprehensively caring for people experiencing homelessness.³³ Continued advocacy for funding models that enable shelters to adapt services to better meet the needs of PEH living with diabetes is needed. Inadequate funding structures and limited resources exacerbate many of the gaps identified in our study, while also constraining shelters' ability to connect clients with external healthcare services.

Despite these financial and resource constraints, many shelters are attempting supportive practices for individuals living with diabetes. For example, 70% of shelter staff noted that their shelters offered snacks (though not exclusive for clients with diabetes), and one interviewee (Participant 4) stated that their shelter has an intake question about diet that was relayed to kitchen staff. Moving forward, shelters could build on these strengths. For instance, formalizing snacks and flexible meal plans into policy would be consistent with best practices. Thus, while medical care is essential, our findings reinforce that long-term improvement requires tackling these social drivers with education and resource support.

Strengths and Limitations

A key strength of this study is the participation of respondents from diverse Alberta emergency shelters. We achieved high participation from frontline, management, and (where available) kitchen/food services staff. Secondly, use of mixed methods enables simultaneously broad understandings from nearly all emergency shelters across Alberta. This complemented the in-depth information gleaned from the qualitative interviews which helped to identify the relevant questions that needed to be asked. While likely representative across Alberta, it is important to

note that practices and policies vary by jurisdiction, and our findings may not be transferable to other places. As in all self-report surveys, there is potential for social-desirability bias. Staff may have presented their shelters in a more positive light, either by overstating the level of care provided or downplaying existing challenges. This tendency is understandable, as shelters are often motivated to demonstrate capability. As a result, our findings may in fact underestimate the true extent of service gaps. The overlapping roles held by staff members within smaller shelters meant some participants spoke from multiple perspectives (frontline worker, food services, and manager), which could blur distinctions between themes. Lastly, our qualitative sample was relatively small. While saturation was reached on key issues, additional interviews (e.g. with shelter directors) may potentially have uncovered further insights.

Conclusions and Future Directions

In summary, emergency shelters in Alberta face significant obstacles in diabetes care due to staff knowledge gaps, limited clinical support, and funding shortfalls. Based on our findings, we propose developing targeted programs to strengthen diabetes supports available in emergency shelters. For example, a diabetes training module for shelter staff, covering topics such as nutrition, blood-glucose monitoring procedures, and medication management, could be implemented across shelters. Similarly, clinical services such as rotating diabetes nurse educator visits or mobile clinics at shelters should be tested. These interventions should be accompanied by structured evaluation to demonstrate their effectiveness and generate robust evidence that can guide funding decisions and support the allocation of resources.

By emphasizing what shelters are already doing well and building on these existing strengths, future initiatives can be framed as collaborative improvements rather than critiques. Grounding recommendations in the voices of participants, such as staff who themselves called for more training, ensures the discussion remains connected to lived realities. With these measures, shelters can strengthen their role in diabetes management while reinforcing partnerships with community health services. Ultimately, such efforts have the potential to reduce preventable complications and meaningfully improve health outcomes for PEH living with diabetes.

Declarations

Ethics Approval and Consent to Participate: This study was approved by the University of Calgary's Conjoint Health Research Ethics Board (REB23-0854). All study participants provided informed consent.

Availability of Data and Materials: The datasets used during the current study are available from the corresponding author on reasonable request.

Competing Interests: All authors have no financial and/or non-financial competing interests to declare.

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