

Self-treatment of abscesses by persons who inject intravenous drugs: a community-based quality improvement inquiry

ABSTRACT

Objective This study had two objectives. First, to understand and then describe the experiences of persons who inject drugs (PWID) and who use self-care treatment(s) to deal with resulting skin and tissue abscesses. Next, to understand and describe their journeys to and experiences with formal healthcare service provision.

Methods Semi-structured interviews were conducted with ten adults who have experience with abscesses, engage in self-care treatment(s), and utilise formal healthcare services in Nova Scotia, Canada.

Results Participants lived with abscesses and utilised various self-treatment strategies, including support from friends. Participants engaged in progressive self-care treatment(s) as the abscesses worsened. They reluctantly made use of formal healthcare services. Finally, participants discussed the importance of education. Moreover, they shared their thoughts in terms of how service provision could be improved.

Conclusions Participants described their lives, including their journeys to intravenous drug use. They also described the self-care treatments they used to heal resulting abscesses. They used these self-care treatments because of a reluctance to utilise formal healthcare services. From a quality improvement perspective, participants outlined suggestions for: 1) expanding hours of service at the community wound care clinic and the centre; 2) permitting pharmacists to include prescribing topical and oral antibiotics; 3) promoting abscess prevention education for clients and healthcare providers; and 4) promising practices for the provision of respectful care during emergency care visits.

Keywords abscesses, self-care treatment, persons who inject drugs, quality improvement

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INTRODUCTION

Persons who inject drugs (PWID) intravenously normally aim to inject a vein using a hypodermic needle and syringe¹. When they miss the vein (missed hit) it may lead to skin and soft tissue injuries (SSTIs), cellulitis and/or abscess formation in varied anatomical sites²⁻¹¹. An abscess contains a collection of pus in the dermis or sub-dermis and is characterised by pain, tenderness, redness, inflammation and infection¹². Larney et al¹³ reported a lifetime prevalence (6–69%) of SSTIs and abscesses for PWID. These are most often caused by bacterial infections (*Staphylococcus aureus*, *Methicillin-resistant S. aureus*)

and may lead to the development of deep vein thrombosis, osteomyelitis, septicaemia and endocarditis, thereby increasing morbidity and mortality^{14–16}.

Abscesses require prompt attention to minimise resulting complications. This attention often includes emergency visits and hospitalisations^{17–19}. However, PWID avoid seeking formal healthcare services (e.g., community clinics, physician offices, emergency care teams) for a variety of reasons and therefore they often engage in self-care treatment(s)^{20–22}. Reasons for their reluctance to utilise formal healthcare services include experiencing lengthy clinic and emergency wait times, being judged and feeling discriminated against by care providers and the resulting experience of being othered²³, and being asked questions about their drug use^{24,25}. In addition, PWID may delay accessing formal healthcare services due to a fear of drug withdrawal and inadequate pain management²⁶. Reluctance to seek out and utilise formal healthcare services can result in self-care treatment(s), including attempts to lance and drain abscesses^{20–22}.

Our goal was to understand and describe the experiences of PWID and who use self-care treatment(s) and to understand and describe their journeys to and experiences with formal healthcare service provision. We also wanted to listen to and record their recommendations for the improvement of services. This was a significant goal of the research because it has the potential to prevent and decrease the number of abscesses resulting in hospital visits and admissions and, ultimately, to decrease the number of related deaths and suffering.

Frameworks guiding this study

Informed by the harm reduction focus of Nova Scotia's *Opioid use and overdose framework*²⁷ and utilising a quality improvement approach²⁸, we sought to engage in semi-structured interviews with PWID to understand their experiences and their recommendations for how to improve community-based abscess care. Freire guided this study and our approach when he wrote "... human existence cannot be silent, nor can it be nourished by false words, but only by true words, with which men and women transform the world"^{29(p88)}. Knowing much of the suffering and resulting deaths are preventable, our goal was to listen carefully and respectfully to participants, such that their voices become part of the solution.

METHODS

The study was conducted in partnership with a harm reduction centre (the centre) and university researchers. Qualitative data were collected from PWID using semi-structured interviews^{30,31}. Several visits to the centre occurred to develop trust with the centre's team and potential participants^{32,33}. The centre offers primary healthcare services to populations including those living with substance use disorder(s), those experiencing homelessness, and sex workers^{34,24}. Funding for the study was provided by a Cape Breton University Research Dissemination Grant.

Participants

Participants included ten adults (PWID and 18+ years) who experienced abscess(es), engaged in self-care treatment(s), utilised formal healthcare services, and expressed an interest in the interview at the time of data collection.

Data collection

Adults accessing the centre were approached by the centre's team to see if they wanted to participate. Interviews were conducted in a quiet space of the participants' choice and snacks were offered. Interviews of 45–60 minutes using a semi-structured script occurred. After four were completed, we listened to the interviews (triangulation) to ensure the questions were respectfully resulting in useful data²⁸. The interview questions explored participants' knowledge of abscess risk, characteristics of an abscess, education of safe injection practices, including skin hygiene, and experiences when utilising healthcare services. We also invited participants to describe recommendations for improvement to the provision of abscess care. We regularly communicated the study progress with the team. Throughout the study we adhered to pandemic guidance³⁵.

Research ethics

Approval for the study was granted by Cape Breton University. Adults who met the inclusion criteria received, discussed and were invited to ask and have answered their questions. A letter of information was provided and written informed consent was obtained. Data collected included gender, age, age of first abscess, products, medications used to self-treat, and when and to whom they reached out for formal healthcare. A CA\$25 gift card was given to each participant after the interview was complete.

Data analysis

Data were recorded, secured, and transcribed verbatim^{30–32}. We read and re-read the transcripts, seeking patterns and themes. From the analysis, four themes emerged: 1) lack of experiential knowledge; 2) progression of self-treatment strategies; 3) utilisation of formal healthcare; 4) education matters; do not rush. We discussed the themes to ensure we captured the essence of the participants' stories. Findings are presented in a narrative format with participants' quotes embedded; identifying characteristics were removed and comments were edited for clarity.

FINDINGS

Ten participants, four women and six men, who experienced one or more abscess(es) participated (mean age 38.5 years; range 29–51 years). Five participants were unsure of the date of their first abscess, two identified a range of dates, and three knew the specific date as they included a critical hospital event. One participant had an active skin infection and seven showed the locations of one or more healed abscess sites (Table 1).

Theme 1: lack of experiential knowledge

When first injecting drugs, participants described limited knowledge of skin infections, cellulitis and abscess(es). One

participant shared “I thought I was the perfect user, I never thought I would get an abscess”. Another stated “I didn’t know what the redness was – the cellulitis; a nurse taught me. I did not know it had become an abscess as I still played sports”. Another participant knew the risks and thought abscesses were inevitable – “I knew you could get them wherever you inject!” Coming to understand the risks varied for participants:

The abscess, was so, so painful. I could not sleep, I was scared; I did not know what it was. My hand was blowing up! I could not work. It was not until someone told me my hand was infected that I panicked. I ended up going to the hospital.

The pill or dirt in the cocaine or whatever was added will build up in your system and cause an abscess, I learned this over time. The dirty needle and water made it worse. Your body pushes the foreign substance out, you have headaches, your tired, all your blood is going to the wound to try to heal it. The area is hot. It feels like it is dragging you toward death. I thought I was dying.

The pain was extreme and unbearable. I hid the wounds. I used to miss the vein if I was shaking and rushing to inject. Some pills like Ritalin, hydromorphone, Dilaudid, and Effexor were worse than others. I did not get them from cocaine. I had abscesses in my hands, wrists, ankles. My teeth got abscessed due to the infections, I lost all my teeth; I have dentures.

Theme 2: progression of self-treatment strategies

Participants described engaging in abscess self-care treatment(s) and identified additional steps taken if the abscess worsened. They also described extreme pain when pressing the abscess(es) with their fingers to pop or squeeze the abscess, or when using a pen knife, surgical blades or a big needle to lance, drain or draw out the infection from the infected area(s).

These activities may take place in a kitchen, bathroom (e.g., work, public, home), or bedroom alone or with a friend. One participant described his self-care:

I use soap, water, or what I can find to clean it. I try to keep it covered. I use clean needles or blades to lance it myself. If it does not fill back up with stuff, I leave it alone. I have stuffed bread in them before, the bread turns green and takes the infection out. It helps. I have had quite a few, the last one was on my finger. It is fine now, but it was discoloured. These were not the nasty ones. I have had to clean abscesses on my hands and legs, but they were not so bad that I had to go to the hospital. When I have them bad, they physically drain me, literally like I am dragging around, exhausted.

Participants explained that self-care treatment(s) changed as the abscess worsened. For example:

If it was infected, I would get half a prescription of antibiotics from someone else. I drank water to flush out the infection. I kept a face cloth on top of the abscess to collect the drainage. It is important to clean your skin first with alcohol swabs to reduce the bacteria. I used antibiotic ointment on small abscesses unless the redness did not go away. I got free antibiotic pills, some people charge each other, but I do not, that’s mean. Sometimes I used a hot facecloth on the area. I drain the abscesses myself, I use aloe, a topical antibiotic, and if it gets worse, I try to get an oral antibiotic from a friend at no charge, it is not good to charge money you know, you could die. I try to get a three-day supply. At first, I did not know what to do. I started treating the abscess with hot water, then cold, then both. I bought a heat bag to put on it to draw out the infection. I told the nurses at the centre, and they drew a line around it. These are my six, three, and two-inch scars. See the length? They were bad ones.

Table 1. Participants’ Description of self-care treatment(s)

Person	Age (years)	Age of first abscess (years)	Self-care treatment and products	Location of healed abscess
1	29	28, 29	Topical antibiotic ointment, stay hydrated	Neck
2	32	Not sure	Aloe, cocoa butter, salves, alcohol swabs	–
3	51	Not sure	Topical antibiotic ointment, stay hydrated	Forearm
4	28	Not sure	Creams (not sure of the names)	–
5	47	30s	Topical antibiotic ointment, hot cloths, bread poultice, hydrogen peroxide, tissue, paper towel	Neck, hand, forearm, fingers
6	35	16	Topical antibiotic ointment, keeps an emergency kit ready in case, hot and cold packs	Upper inner arm, neck, hands
7	42	40s	Topical antibiotic ointment	Elbow, hand
8	50	45	Topical antibiotic ointment, hot cloths, alcohol swabs, eat black pepper, blankets to create a sweat, inject water to take infection away	Wrist (multiple), forearm, ankle (multiple), hand
9	29	27	Topical antibiotic ointment	Arm with residual numbness. I have little ones, but they go away
10	39	Not sure	Topical antibiotic ointment	Ankle, neck

Friends help me

One participant said that, when they have an abscess, they may tell a partner or friend. Participants stated partners or loyal friends would do the following – help incise and drain an abscess in any location, find topical and oral antibiotics and not charge them, and locate wound supplies. Friends would help organise or drive them to an appointment (e.g., doctor, nurse, nurse practitioner, clinic, emergency department). Participants shared the following:

There is a code on the street you know, abscesses can kill you, so you help each other. My friend had an abscess, I cleaned it for him with alcohol, it burned, it helped. If I need help with my abscesses he would help me too, we would, just get, like you know, a topical antibiotic from, like, from like, wherever... [pauses & smiles]. My friends will help if I ask. But I usually treat the abscess myself. With my first abscess I got a hot fever, so I wrapped myself in four blankets. Ate black pepper. I injected water to take it away, it does not last long. My blood went septic with a big abscess, my friend took me for care.

Increasing sense of urgency

Four participants described urgency related to a worsening abscess:

I would only wait a day before getting care from the nurses. I would not wait longer. I do not rely on anyone else to know how bad my skin is, that is my job. Abscesses can kill you. I get care right away. I got care for my wrist abscess from the community nursing team. I am prepared, I keep a kit ready for abscesses in case... people die. My last one in my elbow was so big I could fit a whole roll of gauze in the hole. The home care nurses helped me. I know I can come to the centre for care, they are amazing, I rely on them.

Another shared:

Supplies for abscesses are not easy to find, the pharmacies are expensive, I get what I need at no cost, this is serious stuff. It should be easier to get basic antibiotic prescriptions. Why is it so hard to get oral antibiotics? Why can't a pharmacist order it? Why can't nurses do this? I could die.

From these comments we began to understand self-care as part of a continuum of care and we understood PWID quickly experience how fast abscesses can become serious and the resulting need to seek out formal healthcare providers.

Theme 3: utilisation of formal healthcare

Participants preferred to receive abscess care at the community nursing wound clinic or the centre where they were respected. Participants expressed concern when interacting with emergency care teams (the three provinces mentioned were Alberta, Ontario and Nova Scotia) because it regularly evoked feelings of shame and being judged when asked assessment questions and planning abscess care (e.g., returning to emergency, hospitalisation). Their reluctance to access or remain in care once assessed was related to prior experiences. Participants shared:

It would take a lot for me to ask for help! I would have to be really sick to ask for help from the hospital! We really need a safe injection site, then the abscesses would not be happening. I would cut open my abscess myself ahead of going to the hospital. I would get oral antibiotics first from someone, then if it got worse, I would go to the hospital. It would be my last stop. There should be a priority for abscess care at the hospital. Why can't I get care from a pharmacy or pharmacist? If you need intravenous antibiotics four times a day, and you can hardly make up your mind to plan to go back to the hospital... it is not a surprise that I did not go back. Many people do not have cars or parking money, so we do not go back! If you miss a dose, it is worse, as you must be readmitted and wait, wait, and wait.

Respectful care

Participants shared experiences of receiving respectful care and negotiating with the team.

My abscess was so infected I went for care. They were good to me. I needed care, I went to emergency, they treated me well. I was ashamed to go, I just knew I had to get there. I went alone. They let me have a cigarette, so I stayed.

I did not want to go to the hospital. People were initially judgemental. They asked me about being an intravenous drug user, then they backed up in the room. I did not like this. Yet, they did drain my hand. The care was okay... actually, it was good when the walls come down and you know you are accepted, care was good for me.

The hospital was okay. I just focused on the abscess. They treated me good, they were fair. The abscess smelled so bad when they cut it open. I have not experienced stigma at the hospital. They were good to me; I waited a few hours and it was okay. Everyone else was waiting for care too. You have to be kind and put out kindness, then they will be kind to you.

I went to emergency and the doctors and nurses treated me well. I went back twice a day, for three days and then I took a week of oral antibiotics. It saved my life, from the sepsis. I could have died (tears up). I was treated well in emergency, though I do hear negative stories. I was really scared, yet, I got good care from the team. I would tell people to go to emergency, after I treat the area myself.

I would never lance my abscess. I am too afraid. I got good care in ambulatory care, they used iodine and lots of packing, I think I got the good nurses. They were kind to me, that matters. I do not want to be looked down on by anyone as that upsets me.

I went for care, they were good to me. When I need antibiotics, I go and get them. I do not get them from people on the street. I do not want to take a chance on my life. People will sell you anything and call it an antibiotic. I know I get embarrassed when I ask for help, but that is me. I needed care.

During the pandemic, I received a virtual wound assessment and then I felt better. They taught me to mark the edges

of the redness and told me that if it gets redder to go to emergency. Well, I went to emergency and got good care. My emergency visit was better as I did not go alone, having a support person with me was a huge help – then I did not leave.

We understand this theme as a counter to the narrative of avoiding hospital care. PWID understand there are times when hospital care is necessary. In addition, counter to stories that circulate among PWID, hospital care may be experienced as respectful.

Theme 4: education matters; do not rush

Participants expressed the importance of education related to the safe injection of drugs and skin hygiene. Each participant reflected on the person(s) who initially taught them how to inject drugs and practise skin hygiene. They described the risks of a missed hit, when they inadvertently injected into the fatty, subcutaneous or intramuscular layers, or when the drugs leaked into the skin. One participant learned how to inject from an internet video. Another learned from a former partner who taught him to use new filters and needles:

She taught me about cotton fever as I was doing it wrong. As well, I was using little veins with a big needle and got an abscess. No one taught me, I learned from other people using. I have only had one abscess from missing, and it made my upper arm and breast area swell. I could not sleep and could not use my arm and hand. Someone could show you a bad, bad, bad technique. You must see blood, then you push it in, the correct way matters. Education sessions should remind people to not rush, if they do not see blood, do not inject. People are rushing to inject, do not rush, no blood – no injecting, then you will not miss. Also, if you are not feeling good and you are relying on someone else to inject you, that is not good as the person may rush and miss.

Four participants expressed they learned how to safely inject from nurses at the centre. They readily described the importance of using clean equipment, cookers, needles and cleansing the skin with alcohol swabs. Three stated education classes should include correct injecting techniques, discussions of the risk of missing, and pictures of SSTIs and abscesses to compare their abscess to in order to determine the level of seriousness.

DISCUSSION

This small quality improvement study²⁸ was conducted at a harm reduction centre in partnership with university researchers. Purposeful recruiting from the centre's clientele may have influenced findings because of the centre's mandate³². Interview data revealed thick descriptions^{30,31}. Findings demonstrate that PWID experience a learning curve related to injection and abscesses. Participants most often begin with self-care and utilise formal healthcare services when they experience urgency as the wound worsens. Participants' answers demonstrate understanding of the risks, a desire to heal from and or prevent abscesses, and the human need to be

treated respectfully. From a quality improvement perspective, they outlined improvements including suggestions for: 1) expanding hours of service at the community wound care clinic and the centre; 2) permitting pharmacists to include prescribing topical and oral antibiotics; 3) promoting abscess prevention education for clients and healthcare providers; and 4) promising practices for the provision of respectful care during emergency care visits.

Dechman and colleagues discussed the complex and unique journeys PWID experience²⁴. PWID aim to inject drug(s) intravenously and do not plan to miss or inadvertently inject into the tissues (subcutaneous or intramuscular)². Our findings showed participants, when first injecting, do not always know about SSTIs and abscess formation from bacterial or viral sources. However, over time they learn the seriousness of missing the vein (e.g., peripheral, femoral, neck). They also learn the risk associated with sharing or re-using equipment, the relationship to the development of collapsed and sclerosed veins, cellulitis, abscess(es), and serious infections. Participants were able to consistently describe early and late signs of abscesses^{21,36}. Moreover, once participants knew they had an abscess, they began with self-care interventions. If improvement was not experienced, they accessed formal healthcare. These findings demonstrate PWID are knowledgeable, begin with self-care and when required will seek out formal care, regardless of the reticence. We understand this process as a meaningful continuum of care. They also described the importance of maintaining and growing the wound care nurse role in the Ally Centre and with the community nursing teams.

Need for acute care and resulting reticence

For participants there was reluctance to seek formal healthcare though they understand abscess(es) lead to sepsis, hospitalisation and death²⁴. Participants want to be treated respectfully when engaging in acute care. Reluctance was related to perceptions of formal healthcare staff and fears of being disrespected. Participants want to be treated respectfully throughout the entire encounter. They also required access to reliable transportation and parking fees. Waiting at the hospital was not preferred, though having a friend and being able to go outside for a cigarette eased the waiting time. Participants recommend healthcare professionals receive education related to the compassionate and respectful care of PWID and living with skin and wound complications³³.

Antibiotic stewardship

Antibiotic stewardship for PWID is of concern and challenging to address^{37,38}. Participants discussed the need for pharmacists to be involved in prescribing antibiotics. Topical and oral antibiotics may be consumed as prescribed, shared with another person whose abscess is judged to be worse, given or sold to another, or kept secure for future use²⁰⁻²². The World Health Organization (WHO) recommends consistent education related to correct use of antibiotics³⁹. For PWID this translates to accessible education materials (e.g., online,

printed and workshops)²¹ and consistent and easy access to new equipment used to prepare and inject a drug(s)^{37,40}.

Harvey and colleagues⁴⁰ surveyed healthcare professionals' knowledge about the prevention of infection in PWID. Professionals disclosed they received little to no education on harm reduction, were not comfortable counselling PWID, and lacked knowledge on where to refer PWID for education or supplies. To reduce PWID morbidity and mortality, Harvey et al developed the "Six moments of infection prevention in injection drug use provider educational tool"^{40(p.1)}. The toolkit emphasises a broad framework focused on infection prevention for PWID.

Participants in this study repeatedly shared they were willing to learn, and they wanted to be safe to avoid complications. They requested development of videos and a phone application (app) depicting mild cellulitis to complex abscesses. There are risks associated with the latter request, as solely relying on wound images as a diagnostic tool for mild, progressing and serious infections is not recommended³⁶.

CONCLUSION

In this study, participants became knowledgeable about SSTIs and abscess development. Though they were aware of the risks of (mortality, morbidity), they remained reluctant to access formal healthcare. More research is needed to fully understand the maintenance and expanding of wound care services, including the role of pharmacists in the community. In addition, education for PWID was a consistent message, and PWID want consistent credible materials from which to learn. Finally, PWID want to know they will be respected when accessing healthcare services. Our experience of the interviews left us wondering how best to describe the humility, intelligence and kindness of the participants. They were thoughtful, and wanted to improve the experience for themselves and others.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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ISTAP Global “A World Without Skin Tears” Day 2023

On behalf of the International Skin Tear Advisory Panel (ISTAP), we invite you to join us at ISTAP’s second annual Global “A World Without Skin Tears” Day, which will take place virtually on 27 April 2023.

Topics include but are not limited to:

- Managing Skin Tears in vulnerable populations with Dr Fiona Wood (Australia)
- Evidence behind moisturisation for preventing skin tears with Dr Keryln Carville (Australia)
- Skin Tear Management in Developing Countries with Dr Harikrishna KR Nair (Malaysia)
- Preventing Infection in Skin Tears with Dr Karen Ousey (United Kingdom) and Dr Kimberly LeBlanc (Canada)
- Application of the aSKKING bundle to Skin Tears with Jacqui Fletcher (United Kingdom)

The weblink to this event is <https://www.skintears.org/schedule/global-a-world-without-skin-tears-day-2023> where people can register for this event.