

Skin And Soft Tissue Infections In Persons Who Inject Drugs - Dressing Choices: A Quality Improvement, Community-based Case Series

By Janet L Kuhnke RN BA BScN MS NSWOC FCN DrPsychology, Sharon MacKenzie BScN MN, Avery Tremblett RD BScN and Sarah Wilson BScN (student)

How to cite: Kuhnke JL, Mackenzie S, Tremblett A, Wilson A. Skin and soft tissue infections in persons who inject drugs - dressing choices: a quality improvement, community-based case series. *Wound Care Canada*. 2024;22(2):100-105. DOI: [10.56885/NRSK2582](https://doi.org/10.56885/NRSK2582)

Introduction

The National Harm Reduction Coalition (2024) states that persons who inject drugs are at risk of bacterial, viral and other infections that may be life-threatening. These include contaminated injections, bacteremia, endocarditis, tetanus, necrotizing fasciitis, wound botulism, hepatitis, human immunodeficiency virus, injection-related injuries such as tracking, bruising, vein collapse, abscesses and or emboli.^{1,2}

Persons who inject drugs may develop a skin or soft tissue infection (SSTI) or abscess that may develop into cellulitis or more serious infection in various anatomical locations (neck, forearm, hand, wrist, feet, toes, thigh, calf).³⁻¹¹ In a recent study, Benribi et al. (2023) report that as many as 63% (n=297) of persons describe having an injection-related abscess at the drug injection site

within their lifetime.¹²

An abscess is an infection (bacterial) that forms into a pocket of pus underneath the skin; this may lead to an abscess that is caused by bacteria collecting under the skin.¹³ An abscess may be caused by bacteria in the drugs, on injection equipment or through the process of injecting. The healing of an abscess may be complicated by a person's multiple comorbidities (e.g., immunosuppression, nutritional compromise, depression, mental health challenges, diabetes mellitus, heart and lung issues) and from psychosocial challenges such as experiencing homelessness, discrimination and stigma.^{2,14}

In part one of this community-based study, we learned that individuals access care for their abscess from a variety of sources and there are many barriers to care. Clients described being reluctant at times to access care from formal

health-care services (e.g., acute, emergency care).^{12,15} We also learned that persons who develop an abscess engage in self-treatment of their wound at home, on the street or by asking friends to help with wound care. If the wound becomes more serious, persons may then access formal health-care services and community-based health programs that include interdisciplinary teams of social workers, physicians, pharmacists, laboratory technicians and nurses).¹⁶ As a result of this study, the centre adopted (with permission) the *British Columbia Centre for Disease Control: Skin Infections (Harm Reduction Resource)*.¹⁷ We also learned that clients prefer wound care services and intravenous antibiotic delivery in a setting where there are trust-filled relationships.¹⁷

This paper reports on part two of the study. We share our quality improvement strategy and report on three client cases from the clinic community-based team focused on abscess prevention and management. This centre where this study took place provides care to vulnerable persons, often marginalized, oppressed or unsheltered.^{18,19} In this part of the study, staff at a community-based health clinic explored steps to improve assessing and managing wounds related to abscesses. Specifically, we wanted to explore our skin and wound care practices including assessment and documentation. Second, we wanted to review our use of, and access to, wound care dressings.

Materials/Method

A qualitative, case-based research approach was used to review our current client-centred wound care practices.^{20,21} We also embedded quality improvement principles to guide changes in our documentation practice.²² University research ethics were applied for and approved. Approval for the study was gained from The Ally Centre and funding for a trial of a dressing was approved from Mölnlycke Health Care.²³ Team members included the clients, emergency department staff, the Continuing Care Department, Victoria Order of Nurses, and the physician and nurses at the

health clinic.

This study is framed within Nova Scotia's Opioid Use and Overdose Framework (2019).²⁴ We also grounded our change in the best practice recommendations for the prevention and management of wounds.²⁵ Therefore, the objective of the study was to embark on a quality improvement initiative related to wound assessment and documentation. A second objective was to report on three



clients piloting an all-in-one dressing.

Results

To establish a baseline, the clinic team reviewed present wound assessment and documentation of skin and wound care through chart audits. We identified that clients may have multiple wounds and there was no validated wound documentation tool in use. As well, from client feedback, we learned that they prefer a dressing that they can lift and reapply over the wound area, as some persons continue to inject drugs within the wound bed. This was and remains a challenge in this study. We also reviewed the use of various wound care dressings available to the clinic. From our discussions, we proposed several changes to support the delivery of best practices in wound care.

First, between January and June 2024, we adopted and educated the staff on the use of the Bates-Jensen Wound Assessment Tool (BWAT) to document wound care.²⁶ The team's adminis-

Client 1: Male, 60's, uses substances, and has access to safe supply, lives with diabetes mellitus and is experiencing homelessness.

Oral and IV antibiotics.

Wounds on right forehands and foot (four-year history of open wounds with clinic team)

Infection control, wound cleansing and MFSF dressing utilized.

Care is ongoing and remains complex.



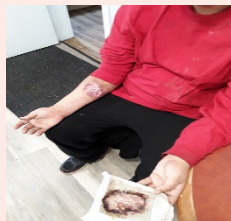
Client 2: Male, 20's uses substances.

Wound right forearm (weeks to months) multiple injections and is experiencing homelessness.

Oral and IV antibiotics.

Infection control, wound cleansing and MFSF dressing utilized.

Taught self-care, wound closed.



Client 3: Female, 30's, uses substances.

Wound on the right forearm (near elbow) and lower thigh related to missed injections, lives housed.

Oral and IV antibiotics.

Infection control, wound cleansing and MFSF dressing utilized.

Multiple wounds closed.



ical record. Second, between January and June 2024, we adopted the use of the PDF fillable Inlow's 60-second Diabetic Foot Screen.²⁷ Third, we embedded a foot care nurse assessment and charting tool. Education on the BWAT and Inlow tool continues and is being audited.

Finally, we searched the literature,²⁸ and then partnered with Mölnlycke Health Care to trial a multidimensionally flexible silicone-coated foam (MFSF) dressing (Mepilex Border Flex™, Molnlycke Health Care) as it is conformable, discrete, and able to be lifted and reapplied.²⁹ The following three cases synopses are purposely shared as they reflect the complexity of wound care service and that clients may have multiple wounds. For privacy, client information has been modified.

Discussion And Implications For Practice

Improved communication: Skin and soft tissue infection related to the injection of substances remain a significant concern in the community care.^{2,12} Healing of these wounds is often complicated by other co-occurring health issues,³¹ stereotyping and stigmatization of persons injecting drugs.^{2,32} Education on safe injection in needle exchange programs continue to be key to prevention.²

In this quality improvement study, the team was able to educate and embed the BWAT and Inlow validated tools in the electronic charting system, as well as a nursing foot care assessment (non-validated). The use of validated tools is important for clear and consistent sharing of skin and wound care information between team members, for monitoring progress of the wound healing and risk of developing diabetes-related foot complications.²⁷

Challenge of multiple wounds: Consistent with the literature, in the population this clinic serves, clients may have an abscess related to injection drug use and other wounds at various stages of healing such as those related to falls, trauma (fractures), burns (sunburn), insect bites and being nutritionally compromised.^{33,34} We also

learned that clients may also have foot complications such as soft-tissue injuries, corns, callous, and nail pathologies and infections.³¹

Assessment of wounds using the BWAT has begun to standardize assessment and communication of wound progress. Also, the use of a MFSF dressing is versatile and suitable for wounds at multiple healing stages. The dressing offered both absorption, moisture control, protection and stayed in place for multiple days making them ideal for managing challenging wounds, especially when the client's returns for care may be sporadic. Clients comment that the materials used in the outer layer of the dressings are discrete rather than bright white. Some report the dressing didn't always stay in place /adhere for multiple days as hoped.

We continue to have challenges caring for clients with wounds as the population we serve is mobile and not all persons return for wound care as planned. We offer self-care dressing kits as appropriate.

Interprofessional collaboration: Partnering with industry to trial products has been of benefit to our team. This partnership has supported our access to trial an all-in-one dressing.

Staff feedback includes:

Staff A:* The MFSF dressings offer superior adherence compared to standard dressings, remaining in place for longer durations. Their surface allows for easy labeling, enabling health-care providers to write dates and instructions directly on the dressing. Clients have expressed a preference for these dressings due to their ability to be peeled back and reapplied, offering greater convenience. Additionally, their absorbency facilitates easier monitoring of wound discharge, contributing to improved wound management and care.

Staff B:* The MFSF dressings offer an ideal solution for clients that can't return regularly for wound care and maintenance. As a dressing that can stay in place for more than 24 hours, has good drainage capacity and allows for readjustment by our clients as necessary, MFSF dressings are a versatile option in our wound care toolkit.

***Editors note:** The opinions expressed are those of the staff involved in the study. They do not constitute a guarantee or endorsement of any kind by Wound Care Canada or Wounds Canada.

Conclusion

This case study series is part of a larger research study. We wanted to share our progress to encourage other teams to partner, collaborate and embed validated tools into practice.

Regardless of the barriers to care, we continue to aim to provide wound care to all populations. The persons we serve are vulnerable and trust-filled relationships are foundational to care. Vulnerable and unsheltered populations need skin health assessment and timely wound care.^{15,17}

Utilizing the MFSF dressing provided an opportunity to provide timely dressing changes. In a case-by-case approach we continue to partner with industry to ensure we can trial this all-in-one dressing for clients with intravenous abscesses.

This is a key reminder that skin health and wound care issues cross all populations, including those identified as vulnerable and experiencing homelessness. Finally, interprofessional teamwork is essential for prevention and to initiate proactive wound care.

Janet L Kuhnke RN BA BScN MS NSWOC FCN DrPsychology is Associate Professor, School of Nursing, Cape Breton University, Sydney NS.
Avery Tremblett RD BScN*
Sarah Wilson, BScN (student)*
Sharon MacKenzie BScN MN*

*The Ally Centre of Cape Breton, Sydney NS.

References

1. National Harm Reduction Coalition. Getting off right: a safety manual for injection drug users. Available from: <https://harmreduction.org/issues/safer-drug-use/injection-safety-manual/potential-health-injections/>
2. Canadian Centre on Substance Abuse. Needle exchange programs (NEPs) FAQs 2019. Available from: <https://www.ccsa.ca/sites/default/files/2019-04/ccsa-010055-2004.pdf>
3. Hope VD, Parry JV, Ncube F, Hickman M. Not in the vein: 'missed hits', subcutaneous and intramuscular injection and associated harms among people who inject psychoactive drugs in Bristol, United Kingdom. *Int J Drug Policy* 2016;28:83–90.
4. Asher AK, Zhong Y, Garfein RS, Cuevas-Mota J, Teshale E. Association of self-reported abscess with high-risk injection-related behaviors among young persons who inject drugs. *J Assoc Nurses AIDS Care*. 2019;30:142–150.
5. Sanchez DP, Tookes H, Pastar I, Lev-Tov H. Wounds and skin and soft tissue infections in people who inject drugs and the utility of syringe service programs in their management. *Adv Wound Care* 2021;10:571–582.
6. Ramakrishnan K, Salinas RC, Higuera NIA. Skin and soft tissue infections. *Am Fam Physician* 2015;92:474–488.
7. Sahu KK, Tsitsilianos N, Mishra AK, Suramaethakul N, Abraham G. Neck abscesses secondary to pocket shot intravenous drug abuse. *BJM Case Report* 2020;13:1–2.
8. Pastorino A, Tavarez MM. Incision and drainage. Treasure Island, FL: StatPearls Publishing; 2020.
9. Stevens DL, Bisno AL, Chambers HF, Dellinger EP, Goldstein EJC, Borbach SL, et al. Practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the Infectious Disease Society of America. *IDSA Guideline* 2014;59:e1–e52.
10. Lavender TW, McCarron B. Acute infections in IDU. *Royal College Physicians* 2013;13:511–513.
11. Maloney S, Keenan E, Geoghegan N. What are the risk factors for soft tissue abscess development among injection drug users? *Nursing Times* 2010;106. Available from: <https://www.nursingtimes.net/clinical-archive/substance-misuse/what-are-the-risk-factors-for-soft-tissue-abscess-development-among-injecting-drug-users-14-06-2010/>
12. Benrubi LM, Silcox J, Hughto J, Stopka TJ, Palacios WR, Shrestha S, et al. Trends and correlates of abscess history among people who inject drugs in Massachusetts: A mixed methods exploration of experiences amidst a rapidly evolving drug supply. *Drug Alcohol Depend Rep*. 2023; 8, 2772-7246. DOI: <https://doi.org/10.1016/j.dadr.2023.100176>
13. National Alliance of State and Territorial AIDS Directors. Wound care and medical triage for people who use drugs and the program that serve them. 2023. <https://nastad.org/sites/default/files/2023-04/PDF-Wound-Care-And-Triage.pdf>
14. Tsybina P, Kassir S, Clark M, Skinner S. Hospital admissions and mortality due to complications of injection drug use in two hospitals in Regina, Canada: retrospective chart review. *Harm Reduct J* 2021;18:44. DOI: 10.1186/s12954-021-00492-6
15. Kuhnke JL, Jack-Malik S, Maxwell S, Bickerton J, Porter C, Kuta-George N. Self-treatment of abscesses by persons who inject intravenous drugs: a community-based quality improvement inquiry. *WCET Journal*, 2023;43(1), 28-34.
16. British Columbia Centre for Disease Control. Skin infections. 2022. Available from: http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/Overdose/Skin%20Infections%2024Jan22_FINAL.pdf
17. Bickerton J. Ally Centre outreach street health pilot: final

- report 2022. Available from: <https://www.allycentreof-capebreton.com/images/Files/Final-report-Outreach-Street-Health.pdf>
18. Liamputtong P. Researching the vulnerable. London: Sage Publishing; 2007. DOI: 10.4135/9781849209861
 19. Freire P. Pedagogy of the oppressed. London: Continuum; 2011.
 20. Creswell JW. A concise introduction to mixed methods research. London: Sage Publishing; 2015.
 21. Braun V, Clarke V. Successful qualitative research a practical guide for beginners. London: Sage Publishing; 2013.
 22. Patton MQ. Evaluation flash cards: embedding evaluative thinking in organizational culture. Otto Bremer Trust; 2018.
 23. Global Medical Affairs at Mölnlycke Health Care. Available from: <https://www.woundscanada.ca/health-care-professional/publications/dfc-2>
 24. Nova Scotia Government Department of Health and Wellness. Nova Scotia's opioid use and overdose framework; 2017. Available from: <https://novascotia.ca/opioid/>
 25. Wounds Canada. Foundations of Best Practice for Skin and Wound Management. 2017.
 26. Wounds Canada. Bates-Jensen Wound Assessment Tool. Available from: <https://www.woundscanada.ca/docman/public/health-care-professional/1428-bwat/file>
 27. Blanchette V, Kuhnke JL, Botros M, McCallum C, Evans R. Inlow's 60-second diabetic foot screen: update 2022. *Limb Preservation Journal*. 2023;4(1): 22-28. DOI: 10.56885/HRJU7789
 28. Santamaria N, Gerdtz M, Kapp S, Wilson L, Gefen A. A randomised controlled trial of the clinical effectiveness of multi-layer silicone foam dressings for the prevention of pressure injuries in high-risk aged care residents: The Border III Trial. *Int Wound J*. 2018 Jun;15(3):482-490. DOI: 10.1111/iwj.12891. Epub 2018 Apr 10. PMID. Available from: <https://pubmed.ncbi.nlm.nih.gov/29635842/>
 29. Mölnlycke. Mepilex border flex. Available from: <https://www.molnlycke.ca/products-solutions/mepilex-border-flex/>
 30. Cazalis A, Lambert L, Auriacombe M. Stigmatization of people with addiction by health professionals: Current knowledge. A scoping review. *Drug Alcohol Depend Rep*. 2023;9:100196. Published 2023 Oct 24. DOI: <https://doi.org/10.1016/j.dadr.2023.100196>
 31. Kuhnke JL, Telegdi E, Hansen K. Foot health and footwear for persons experiencing homelessness: a resource. *Limb Preservation Journal*. 2024;5(1):48-59. DOI
 - Canadian Centre on Substance Abuse. Needle exchange programs (NEPs) FAQs 2019. Available from: <https://www.ccsa.ca/sites/default/files/2019-04/ccsa-010055-2004.pdf>
 32. Woolley E. What are the top 10 health issues homeless people face? Available from: <https://homelesshub.ca/blog/2015/what-are-top-10-health-issues-homeless-people-face/>
 33. Gilbert AR, Hellman JL, Wilkes MS, Rees VW, Summers PJ. Self-care habits among people who inject drugs with skin and soft tissue infections: a qualitative analysis. *Harm Reduc J* 2019;16:1–11.
 34. Tarusuk J, Zhang J, Lemyre A, Cholette F, Bryson M, Paquette D. National findings from the Tracks survey of people who inject drugs in Canada, Phase 4, 2017–2019. *Can Commun Dis Rep*. 2020 May 7;46(5):138-148. DOI: 10.14745/ccdr.v46i05a07