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in Health

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HEALTH TECHNOLOGY INQUIRY SERVICE (HTIS)

TITLE: Sterilization of Foot Care Instruments: A Review of the Guidelines

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CONTEXT AND POLICY ISSUES:

The proportion of Canadians requiring some degree of assistance with foot care is increasing.¹ Foot care may be required due to problems associated with foot architecture or with diseases such as diabetes.¹ Foot care may also be required in cases of foot infections.¹ One source of foot infection is through contact with contaminated instruments used for foot care.¹ Foot care instruments include nail clippers and files, scalpels, and callus parers.¹ In 1997, Health Canada published infection control guidelines related specifically to foot care and recommended that “all instruments used in foot care must be sterile.”¹ The guideline is also part of a larger overview of recommendations published by Health Canada in 1998 regarding infection control in health care facilities.² In the latter report, Health Canada recommends that critical items, including all instruments used for foot care, be sterilized by dry heat, autoclave, or by chemical sterilization.² This report will review the evidence-based guidelines regarding the sterilization of instruments used for foot care.

RESEARCH QUESTION:

What are the evidence-based guidelines for the sterilization of foot care instruments?

METHODS:

A limited literature search was conducted on key health technology assessment resources, including OVID Medline and Embase, the Cochrane Library (Issue 3, 2009), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between 2004 and August 2009. Filters were applied to limit the retrieval to health technology assessments, systematic reviews, meta-analyses, and guidelines.

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SUMMARY OF FINDINGS:

One evidence-based guideline³ was identified from the literature search. No health technology assessments, systematic reviews, or meta-analyses were identified.

A document detailing the best practices for cleaning, disinfecting, and sterilizing within health care settings was produced by the Provincial Infectious Diseases Advisory Committee for the Ontario Ministry of Health and Long-Term Care (MOHLTC).³ Expert opinions on the reuse of medical equipment were used to develop the best practices. At least two other Canadian jurisdictions have used the Ontario MOHLTC document to assist in developing their own guidelines and standards.^{4,5}

Instruments used for foot care are considered to be critical medical equipment or devices.³ The categorization of medical equipment or devices as critical, semi-critical, or non-critical is based on a classification system that was developed by Spaulding in 1971.⁶ A critical device is one that enters sterile tissues including the vascular system and is associated with a high risk of infection if the equipment becomes contaminated.³ The MOHLTC guidelines recommend that for re-use, critical devices should be cleaned and sterilized.³ The recommended sterilization approaches for critical devices include: dry heat, steam, 100% ethylene oxide, formaldehyde, 2.5% to 3.5% glutaraldehyde (10 hours at 20°C), hydrogen peroxide gas plasma (75 minutes at 50°C), 6% to 25% hydrogen peroxide liquid (six hours), 7% accelerated hydrogen peroxide (six hours at 20°C), and 0.2% peracetic acid (30 to 45 minutes). No specific information regarding foot care instruments is reported.

Limitations

Our search identified one evidence-based guideline on sterilization of medical equipment including instruments used for foot care. The best practices document was based on expert opinion rather than on a search of the published literature. Information pertaining specifically to foot care instruments was not reported.

CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING:

The Canadian guideline recommends sterilization of foot care instruments by dry heat, steam, or by chemical means. No specific information regarding which chemical sterilization procedure to use for foot care instruments was reported. Further information regarding the comparative effectiveness of chemical sterilization procedures may be helpful. The choice between sterilization approaches may depend on variety of factors including: the availability of sterilization equipment (e.g. autoclave), the time required for sterilization, the medical setting (i.e. community versus in-hospital), the sensitivity of the medical device to heat, the toxicity of a particular chemical, and the comparative costs of different sterilization approaches.

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REFERENCES:

1. Infection control guidelines foot care by health care providers. *Can Commun Dis Rep* 1997;23S8(Supplement). Available: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/97vol23/23s8/fcindexe.html> (accessed 2009 Aug 25).
2. Document Dissemination Division at the Laboratory Centre for Disease Control, HealthCanada. Infection control guidelines for hand washing, cleaning, disinfection and sterilization in health care. *Can Commun Dis Rep* 1998;24S8(Supplement). Available: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/98pdf/cdr24s8e.pdf> (accessed 2009 Aug 25).
3. Provincial Infectious Diseases Advisory Committee(PIDAC). *Best practices for cleaning, disinfection and sterilization in all healthcare settings*. Toronto: Ministry of Health and Long-Term Care/ Public Health Division/ Provincial Infectious Diseases Advisory Committee(PIDAC); 2006 Apr. Available: http://www.rcdso.org/pdf/MOHLTC_bp_cds_2.pdf (accessed 2009 Aug 25).
4. *Best practices for cleaning, disinfection and sterilization in health authorities*. Vancouver: British Columbia Ministry of Health. Patient Safety Branch; 2007 Mar. Available: http://www.llbc.leg.bc.ca/public/PubDocs/bcdocs/422840/BPGuidelines_Cleaning_Disinfection_Sterilization_MedicalDevices.pdf (accessed 2009 Aug 25).
5. Public Health Division. *Standards for cleaning, disinfection and sterilization of reusable medical devices for all health care facilities and settings*. Edmonton: Alberta Health and Wellness; 2008 Jan 16. Available: <http://www.health.alberta.ca/documents/IPC-Medical-Device-Cleaning-2008.pdf> (accessed 2009 Aug 25).
6. Spaulding EH. The role of chemical disinfection in the prevention of nonsocomial infections. In: Brachman PS, Eickhoff TC, editors. *Proceedings of International Conference on Nonsocomial Infections*. Chicago (IL): American Hospital Association; 1971. p.254-74.