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CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Point-of-Care Fluorescence Imaging for Wound Care: Clinical Effectiveness, Cost-Effectiveness, and Guidelines

Service Line:	Rapid Response Service
Version:	1.0
Publication Date:	June 21, 2018
Report Length:	5 Pages

CADTH

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Cite As: Point-of-care fluorescence imaging for wound care: clinical effectiveness, cost effectiveness, and guidelines. Ottawa: CADTH; 2018 Jun. (CADTH rapid response report: reference list).

Acknowledgments:

Research Questions

1. What is the clinical effectiveness of point-of-care fluorescence imaging for wound care?
2. What is the cost-effectiveness of point-of-care fluorescence imaging for wound care?
3. What are guidelines informing the use of point-of-care fluorescence imaging for wound care?

Key Findings

One non-randomized study was identified regarding the clinical effectiveness of point-of-care fluorescence imaging for wound care.

Methods

A limited literature search was conducted on key resources including Medline and Embase, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2013 and June 19, 2018. Internet links are provided where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Adults (inpatient and/or outpatient) receiving wound care
Intervention	Point-of-care fluorescence imaging (e.g., MolecuLight or any other brand/manufacturer)
Comparators	Q1 & 2: Any point-of-care fluorescence imaging device; Standard care; No comparator Q3: No comparator
Outcomes	Q1: Clinical effectiveness (e.g., faster/improved rate of wound healing, more accurate swabbing [e.g., improved detection for signs and symptoms of guided-Levine swabbing]) Q2: Cost-effectiveness Q3: Guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations, evidence-based guidelines

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, economic evaluations, and evidence-based guidelines.

One non-randomized study was identified regarding the clinical effectiveness of point-of-care fluorescence imaging for wound care. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, economic evaluations, or evidence-based guidelines were identified.

References of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

1. DaCosta RS, Kulbatski I, Lindvere-Teene L, Starr D, Blackmore K, Silver JI, et al. Point-of-care autofluorescence imaging for real-time sampling and treatment guidance of bioburden in chronic wounds: first-in-human results. PloS One. 2015;10(3):e0116623. PubMed: PM25790480

Economic Evaluations

No literature identified.

Guidelines and Recommendations

No literature identified.

Appendix — Further Information

Non-Randomized Studies – Microbiological Outcomes

2. Blackshaw EL, Jeffrey SLA. Efficacy of an imaging device at identifying the presence of bacteria in wounds at a plastic surgery outpatients clinic. J Wound Care. 2018 Jan 2;27(1):20-26. PMID: PM29333929

3. Blumenthal E, Jeffery SLA. The use of the MolecuLight i: X in managing burns: a pilot study. J Burn Care Res. 2017 Apr 21.
PubMed: PM28448296

4. Ottolino-Perry K, Chamma E, Blackmore KM, Lindvere-Teene L, Starr D, Tapang K, et al. Improved detection of clinically relevant wound bacteria using autofluorescence image-guided sampling in diabetic foot ulcers. Int Wound J. 2017 Oct;14(5):833-841.
PubMed: PM28244218

5. Rennie MY, Lindvere-Teene L, Tapang K, Linden R. Point-of-care fluorescence imaging predicts the presence of pathogenic bacteria in wounds: a clinical study. J Wound Care. 2017 Aug 2;26(8):452-460.
PubMed: PM28795890

Case Series

6. Blumenthal E, Jeffrey S. Autofluorescence imaging for evaluating debridement in military and trauma wounds. Mil Med. 2018 Mar 1;183(suppl_1):429-432.
PMID: PM29635558

Randomized Controlled Trials - Ongoing Studies

7. The Leeds Teaching Hospitals, NHS Trust. NCT03270904: Moleculight i:X™ in Wound Healing. *ClinicalTrials.gov*. Bethesda (MD): U.S. National Library of Medicine; 2018 (est. completion date – August 31, 2018). https://clinicaltrials.gov/ct2/show/nct03270904 Accessed 2018 Jun 20.

8. Pang, C. NCT03181568: Evaluating surface area reduction using MolecuLight imaging device. *ClinicalTrials.gov*. Bethesda (MD): U.S. National Library of Medicine; 2017 (not yet recruiting). https://clinicaltrials.gov/ct2/show/NCT03181568 Accessed 2018 Jun 20.

Review Articles

9. Anghel EL, Falola RA, Kim PJ. Fluorescence technology for point of care wound management. Surg Technol Int. 2016 Apr;28:58-64.
PubMed: PM27175815

10. DaCosta RS, Ottolino-Perry K, Banerjee J. Can imaging put the "advanced" back in advanced wound care? Adv Wound Care (New Rochelle). 2016 Aug 1;5(8):329-331.
PMID: PM27602251