

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

Authors: Kelsey Seal, Charlene Argáez

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:

Disclaimer: The information in this document is intended to help Canadian health care decision-makers, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not endorse any information, drugs, therapies, treatments, products, processes, or services.

While care has been taken to ensure that the information prepared by CADTH in this document is accurate, complete, and up-to-date as at the applicable date the material was first published by CADTH, CADTH does not make any guarantees to that effect. CADTH does not guarantee and is not responsible for the quality, currency, propriety, accuracy, or reasonableness of any statements, information, or conclusions contained in any third-party materials used in preparing this document. The views and opinions of third parties published in this document do not necessarily state or reflect those of CADTH.

CADTH is not responsible for any errors, omissions, injury, loss, or damage arising from or relating to the use (or misuse) of any information, statements, or conclusions contained in or implied by the contents of this document or any of the source materials.

This document may contain links to third-party websites. CADTH does not have control over the content of such sites. Use of third-party sites is governed by the third-party website owners' own terms and conditions set out for such sites. CADTH does not make any guarantee with respect to any information contained on such third-party sites and CADTH is not responsible for any injury, loss, or damage suffered as a result of using such third-party sites. CADTH has no responsibility for the collection, use, and disclosure of personal information by third-party sites.

Subject to the aforementioned limitations, the views expressed herein are those of CADTH and do not necessarily represent the views of Canada's federal, provincial, or territorial governments or any third party supplier of information.

This document is prepared and intended for use in the context of the Canadian health care system. The use of this document outside of Canada is done so at the user's own risk.

This disclaimer and any questions or matters of any nature arising from or relating to the content or use (or misuse) of this document will be governed by and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein, and all proceedings shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario, Canada.

The copyright and other intellectual property rights in this document are owned by CADTH and its licensors. These rights are protected by the Canadian *Copyright Act* and other national and international laws and agreements. Users are permitted to make copies of this document for non-commercial purposes only, provided it is not modified when reproduced and appropriate credit is given to CADTH and its licensors.

About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

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/manufacture)
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](https://pubmed.ncbi.nlm.nih.gov/25790480/)

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](#)