

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

# Telemammography for Breast Cancer Diagnosis: Clinical Utility, Cost-Effectiveness, and Guidelines

Service Line: Rapid Response Service  
Version: 1.0  
Publication Date: August 27, 2019  
Report Length: 6 Pages

**Authors:** Yan Li, Nina Frey

**Cite As:** *Telemammography for Breast Cancer Diagnosis: Clinical Utility, Cost-Effectiveness, and Guidelines*. Ottawa: CADTH; 2019 Aug. (CADTH rapid response report: summary of abstracts).

**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 do not necessarily reflect the views of Health Canada, Canada's provincial or territorial governments, other CADTH funders, 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.

**Funding:** CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

Questions or requests for information about this report can be directed to [requests@cadth.ca](mailto:requests@cadth.ca)

## Research Questions

1. What is the clinical utility of telemammography for the diagnosis of breast cancer?
2. What is the cost-effectiveness of telemammography for the diagnosis of breast cancer?
3. What are the evidence based guidelines regarding the use of telemammography for the diagnosis of breast cancer?

## Key Findings

No relevant health technology assessments, systematic reviews, meta-analyses, randomized-controlled trials, non-randomized studies, and economic evaluations were identified regarding the use of telemammography for the diagnosis of breast cancer. Additionally, no evidence-based guidelines were identified regarding the use of telemammography.

## Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were diagnostic telemammography and breast cancer. 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, 2014 and August 15, 2019. Internet links were 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**

<b>Population</b>	Q1-3: Patients of any age suspected of having breast cancer
<b>Intervention</b>	Q1-3: Diagnostic telemammography (i.e., evaluation of images by an offsite radiologist)
<b>Comparator</b>	Q1-2: Diagnostic mammography (i.e., evaluation of images by an onsite radiologist) Q3: Not applicable
<b>Outcomes</b>	Q1: Clinical utility (i.e., patient management, time to diagnose); safety (i.e., false positives or false negatives ratios, harms to the patient) Q2: Cost-effectiveness Q3: Evidence based guidelines
<b>Study Designs</b>	Health technology assessments, systematic reviews, meta-analyses, randomized-controlled trials, non-randomized studies, economic evaluations, and 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.

No relevant health technology assessments, systematic reviews, meta-analyses, randomized-controlled trials, non-randomized studies, and economic evaluations were identified regarding the use of telemammography for the diagnosis of breast cancer. Additionally, no evidence-based guidelines were identified regarding the use of telemammography.

References of potential interest are provided in the appendix.

## Overall Summary of Findings

No relevant literature was found regarding the use of telemammography for the diagnosis of breast cancer, therefore no summary can be provided.

## References Summarized

### Health Technology Assessments

No relevant literature identified.

### Systematic Reviews and Meta-analyses

No relevant literature identified.

### Randomized Controlled Trials

No relevant literature identified.

### Non-Randomized Studies

No relevant literature identified.

### Economic Evaluations

No relevant literature identified.

### Guidelines and Recommendations

No relevant literature identified.

## Appendix — Further Information

### Clinical Practice Guidelines – Non-Systematic Methodology

1. ACR practice parameters for the performance of screening and diagnostic mammography. Reston (VA): American College of Radiology; 2018: <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/Screen-Diag-Mammo.pdf>  
Accessed 2019 Aug 26  
See: VII. MOBILE AND TELEMMAMMOGRAPHY SETTINGS

### Clinical Practice Guidelines – Abstract Not Available

2. Breast cancer screening and diagnosis, version 3.2018. Plymouth (PA): National Comprehensive Cancer Network; 2018: <https://www.partnershipagainstcancer.ca/db-sage/sage20181297/>  
Accessed 2019 Aug 26

### Non-Randomized Studies

#### *Intervention Unclear*

3. Marino MM, Rienzo M, Serra N, et al. Mobile screening units for the early detection of breast cancer and cardiovascular disease: A pilot telemedicine study in Southern Italy. *Telemed J E Health.* 2019 Apr 4.  
[PubMed: PM30945992](#)

#### *No Comparator*

4. Salazar AJ, Romero JA, Bernal OA, Moreno AP, Velasco SC. Reliability of the BI-RADS final assessment categories and management recommendations in a telemammography context. *Journal of the American College of Radiology: JACR.* 2017 May;14(5):686-692.e682.  
[PubMed: PM27815054](#)
5. Salazar AJ, Romero JA, Bernal OA, Moreno AP, Velasco SC, Diaz XA. Noninferiority and equivalence evaluation of clinical performance among computed radiography, film, and digitized film for telemammography services. *International journal of telemedicine and applications.* 2016;2016:3642960.  
[PubMed: PM27777584](#)
6. Salazar AJ, Romero J, Bernal O, Moreno A, Velasco S, Diaz X. Evaluation of low-cost telemammography screening configurations: a comparison with film-screen readings in vulnerable areas. *J Digit Imaging.* 2014 Oct;27(5):679-686.  
[PubMed: PM24802372](#)

#### *Alternative Setting*

7. Sangare M, Tanner L, Voss S, Laureys F, Hollow D, Toure M. A national teleradiology programme in Mali: implementation and results. *J Telemed Telecare.* 2015 Apr;21(3):131-138.  
[PubMed: PM25680387](#)

## Review Articles

8. Bashshur, R. L., Krupinski, E. A., Thrall, J. H., & Bashshur, N. (2016). The empirical foundations of teleradiology and related applications: A review of the evidence. *Telemed J E Health*, 2016 Nov;22(11):868-898.  
<https://www.ncbi.nlm.nih.gov/pubmed/27585301>  
Accessed 2019 Aug 26