TITLE: Porcelain-Fused-to-Metal Crowns versus All-Ceramic Crowns: Clinical and Cost-Effectiveness

DATE: 24 March 2016

RESEARCH QUESTIONS

1. What is the clinical evidence on the longevity of porcelain-fused-to-metal crowns?
2. What is the clinical evidence on the longevity of all-ceramic/porcelain crowns?
3. What is the clinical evidence on the longevity of porcelain-fused-to-metal crowns compared with all-ceramic crowns?
4. What is the long-term (eight years and longer) cost-effectiveness of porcelain-fused-to-metal crowns compared with all-ceramic crowns?
5. What are the contextual considerations for all-ceramic crowns or porcelain-fused-to-metal crowns that may affect their clinical or cost-effectiveness?

KEY FINDINGS

One systematic review, five randomized controlled trials, and 19 non-randomized studies were identified regarding the longevity and contextual considerations of porcelain-fused-to-metal crowns or all-ceramic/porcelain crowns; one economic evaluation was identified regarding long-term costs for single-implant patients.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, ECRI Institute, Canadian and major international health technology agencies, as well as a focused Internet search. For research questions 1, 2 and 5, methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies and economic studies. No filters were used to limit

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retrieval for questions 3 and 4. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between April 1, 2015 and March 16, 2016. Internet links were provided, where available.

This report is an update to a previous CADTH Rapid Response report, published in May 2015: *Porcelain-fused-to-metal crowns versus all-ceramic crowns: a review of the clinical and cost-effectiveness.*

**SELECTION CRITERIA**

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

<table>
<thead>
<tr>
<th>Table 1: Selection Criteria</th>
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<tr>
<td><strong>Population</strong></td>
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<td><strong>Intervention</strong></td>
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<td><strong>Comparator</strong></td>
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<td><strong>Outcomes</strong></td>
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<tr>
<td><strong>Study Designs</strong></td>
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**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, and economic evaluations.

One systematic review, five randomized controlled trials, and 19 non-randomized studies were identified regarding the longevity and contextual considerations of porcelain-fused-to-metal crowns or all-ceramic/porcelain crowns; one economic evaluation was identified regarding long-term costs for single-implant patients. No relevant health technology assessments were identified.

Additional references of potential interest are provided in the appendix.
Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Randomized Controlled Trials


Additional Contextual Considerations


Non-Randomized Studies


   PubMed: PM26924133

    PubMed: PM25910472

    PubMed: PM26393865

    PubMed: PM25965636

    PubMed: PM24188105

    PubMed: PM26376100

    PubMed: PM26357698

    PubMed: PM26507927

    PubMed: PM24506777

    PubMed: PM26050028


Additional Contextual Considerations


Economic Evaluations


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APPENDIX – FURTHER INFORMATION:

Previous CADTH Reports


Non-Randomized Studies – Alternate Intervention


Review Articles


Additional References – Alternate Study Design