TITLE: Contact Isolation Precautions for Ambulatory Oncology Patients Positive for Antibiotic Resistant Organisms: A Review of Clinical Effectiveness and Guidelines

DATE: 2 October 2015

CONTEXT AND POLICY ISSUES

Oncology patients may represent a high risk group for bacterial colonization or infection due to the impact that cancer itself and cancer treatments, such as chemotherapy and radiation, can have on immune system function. Antibiotic resistant organisms (AROs) may be challenging to treat and care must be taken to minimize the risk of transmission between patients and healthcare personnel and from patient to patient when delivering care. Ambulatory oncology patients are at risk of infection transmission when attending clinic visits, undergoing diagnostic tests or attending urgent care visits (for example, to an emergency department).

The Centers for Disease Control and Prevention (CDC) describe an infection control and prevention plan for outpatient oncology settings, describing fundamental principles of infection prevention including ‘Standard Precautions’ and ‘Transmission-Based Precautions’. Standard Precautions include the minimum infection prevention measures and they apply to all patient care in all settings, regardless of whether the patient has an infection or is suspected of having an infection. Hand hygiene; the use of personal protective equipment such as gloves, gowns, and facemasks; respiratory hygiene and cough etiquette; safe injection practices, and procedures for the handling of contaminated equipment or surfaces are all components of Standard Precautions. Standard Precautions can be augmented with Transmission-Based Precautions (Contact Precautions [also called contact isolation precautions], Droplet Precautions, and Airborne Precautions) when the risk of transmission of an organism will not be eliminated with Standard Precautions alone and patients are known or suspected to be colonized or infected with pathogens that are highly transmittable or important epidemiologically.

When providing ambulatory care to oncology patients that are known to be infected or colonized with AROs, it is important that adequate precaution be taken to reduce transmission risk. It is unclear, however, if Standard Precautions are sufficient or whether additional precautions, such as Contact Precautions are required. Contact Precautions may include prioritizing placement of the patient into an exam room, use of additional personal protective equipment, additional hand
hygiene, and other precautions that extend beyond Standard Precautions. This report sought to review the current literature evaluating the effectiveness of contact isolation precautions versus routine infection prevention practices for ambulatory oncology patients infected or colonized with AROs and evidence-based guidelines regarding the use of contact isolation precautions for ambulatory oncology patients infected or colonized with AROs.

**RESEARCH QUESTIONS**

1. What is the comparative clinical effectiveness of contact isolation precautions versus routine infection prevention practices for ambulatory oncology patients infected or colonized with antibiotic resistant organisms (AROs)?

2. What are the evidence-based guidelines regarding the use of contact isolation precautions for ambulatory oncology patients infected or colonized with AROs?

**KEY FINDINGS**

No relevant literature was identified pertaining to comparative clinical effectiveness of contact isolation precautions versus routine infection prevention practices for ambulatory oncology patients infected or colonized with antibiotic resistant organisms. Similarly, no evidence-based guidelines regarding the use of contact isolation precautions for ambulatory oncology patients infected or colonized with AROs.

**METHODS**

**Literature Search Strategy**

A limited literature search was conducted on key resources including PubMed, 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. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, randomized controlled trials, non-randomized studies and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2005 and August 31, 2015.

Rapid Response reports are organized so that the evidence for each research question is presented separately.

**Selection Criteria and Methods**

One reviewer screened citations and selected studies. In the first level of screening, titles and abstracts were reviewed and potentially relevant articles were retrieved and assessed for inclusion. The final selection of full-text articles was based on the inclusion criteria presented in Table 1.
Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Adult ambulatory oncology patients infected or colonized with antibiotic resistant organisms (AROs) (e.g., Methicillin-resistant Staphylococcus aureus, Vancomycin-resistant Enterococci, extended-spectrum β-Lactamase producing organisms, Carbapenem-resistant organisms)</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Contact isolation precautions</td>
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<tr>
<td>Comparator</td>
<td>Q1: Standard precautions for patients infected or colonized with AROs Q2: No comparator required</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Q1: Clinical effectiveness (e.g., rate and risk of horizontal transmission resulting in colonization or infection); Harms Q2: Guidelines regarding the use of contact isolation precautions for ambulatory oncology patients</td>
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<tr>
<td>Study Designs</td>
<td>Q1: Health technology assessments (HTA), systematic reviews (SR), meta-analyses (MA), randomized controlled trials (RCTs), non-RCTs Q2: Evidence-based guidelines</td>
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Exclusion Criteria

Articles were excluded if they did not meet the selection criteria outlined in Table 1, were duplicate publications, or were published prior to 2005. As well, review articles that were not based upon a systematic literature search and clinical practice guidance documents that were not clearly evidence-based were excluded and are listed in Appendix 2.

SUMMARY OF EVIDENCE

Quantity of Research Available

A total of 548 citations were identified in the literature search. Following screening of titles and abstracts, all 548 citations were excluded with no potentially relevant reports from the electronic search being retrieved for full-text review. Ten potentially relevant publications were retrieved from the grey literature search. Of these potentially relevant articles, all 10 publications were excluded due to the population or design. Appendix 1 describes the PRISMA flowchart of the study selection. Additional references of potential interest are provided in Appendix 2.

Summary of Findings

No relevant literature was identified pertaining comparative clinical effectiveness of contact isolation precautions versus routine infection prevention practices for ambulatory oncology patients infected or colonized with antibiotic resistant organisms. Similarly, no evidence-based guidelines regarding the use of contact isolation precautions for ambulatory oncology patients infected or colonized with AROs.
CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING

There is an evidence gap regarding the clinical effectiveness of contact isolation precautions compared with routine infection prevention practices for practices for ambulatory oncology patients infected or colonized with antibiotic resistant organisms. Further, there were no evidence-based guidelines identified that addressed contact isolation precautions for ambulatory oncology patients infected or colonized with AROs.

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REFERENCES

APPENDIX 1: Selection of Included Studies

548 citations identified from electronic literature search and screened

548 citations excluded

0 potentially relevant articles retrieved for scrutiny (full text, if available)

10 potentially relevant reports retrieved from other sources (grey literature, hand search)

10 potentially relevant reports

10 reports excluded:
- irrelevant population (9)
- design (1)

0 reports included in review
APPENDIX 2: Additional Literature - Guidelines (Not clearly evidence-based or not specific to ambulatory oncology patients)


