

Role of Screening for Respiratory Syncytial Virus or Influenza and Empirical Antiviral Treatment for Patients With Community-Acquired Pneumonia: A Rapid Review

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Evidence Development and Standards Branch at Health Quality Ontario

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Conflict of Interest Statement

All reports prepared by the Evidence Development and Standards branch at Health Quality Ontario are impartial. There are no competing interests or conflicts of interest to declare.

Rapid Review Methodology

Clinical questions are developed by the Evidence Development and Standards branch at Health Quality Ontario in consultation with experts, end users, and/or applicants in the topic area. A systematic literature search is then conducted to identify relevant systematic reviews, health technology assessments, and meta-analyses; if none are located, the search is expanded to include randomized controlled trials and guidelines. Systematic reviews are evaluated using a rating scale developed for this purpose. If a systematic review has evaluated the included primary studies using the GRADE Working Group criteria (<http://www.gradeworkinggroup.org/index.htm>), the results are reported and the rapid review process is complete. If the systematic review has not evaluated the primary studies using GRADE, the primary studies in the systematic review are retrieved and the GRADE criteria are applied to a maximum of 2 outcomes. Because rapid reviews are completed in very short time frames, other publication types are not included. All rapid reviews are developed and finalized in consultation with experts.

About Health Quality Ontario

Health Quality Ontario is an arms-length agency of the Ontario government. It is a partner and leader in transforming Ontario's health care system so that it can deliver a better experience of care, better outcomes for Ontarians, and better value for money.

Health Quality Ontario strives to promote health care that is supported by the best available scientific evidence. The Evidence Development and Standards branch works with expert advisory panels, clinical experts, scientific collaborators, and field evaluation partners to conduct evidence-based reviews that evaluate the effectiveness and cost-effectiveness of health interventions in Ontario.

Based on the evidence provided by Evidence Development and Standards and its partners, the Ontario Health Technology Advisory Committee—a standing advisory subcommittee of the Health Quality Ontario Board—makes recommendations about the uptake, diffusion, distribution, or removal of health interventions to Ontario's Ministry of Health and Long-Term Care, clinicians, health system leaders, and policy-makers.

Health Quality Ontario's research is published as part of the *Ontario Health Technology Assessment Series*, which is indexed in MEDLINE/PubMed, Excerpta Medica/Embase, and the Centre for Reviews and Dissemination database. Corresponding Ontario Health Technology Advisory Committee recommendations and other associated reports are also published on the Health Quality Ontario website. Visit <http://www.hqontario.ca> for more information.

About Health Quality Ontario Publications

To conduct its rapid reviews, Evidence Development and Standards and its research partners reviews the available scientific literature, making every effort to consider all relevant national and international research; collaborate with partners across relevant government branches; consult with expert advisory panels, clinical and other external experts, and developers of health technologies; and solicit any necessary supplemental information.

In addition, Evidence Development and Standards collects and analyzes information about how a health intervention fits within current practice and existing treatment alternatives. Details about the diffusion of the intervention into current health care practices in Ontario can add an important dimension to the review. Information concerning the health benefits, economic and human resources, and ethical, regulatory, social, and legal issues relating to the intervention may be included to assist in making timely and relevant decisions to optimize patient outcomes.

Disclaimer

This report was prepared by Health Quality Ontario or one of its research partners for the Ontario Health Technology Advisory Committee and was developed from analysis, interpretation, and comparison of scientific research. It also incorporates, when available, Ontario data and information provided by experts and applicants to Health Quality Ontario. It is possible that relevant scientific findings may have been reported since the completion of the review. This report is current to the date of the literature review specified in the methods section, if available. This analysis may be superseded by an updated publication on the same topic. Please check the Health Quality Ontario website for a list of all publications: <http://www.hqontario.ca/evidence/publications-and-ohtac-recommendations>.

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List of Abbreviations

CAP	Community-acquired pneumonia
EBM	Evidence-based medicine
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HQO	Health Quality Ontario
RCT	Randomized controlled trial
RSV	Respiratory syncytial virus

Background

As legislated in Ontario's *Excellent Care for All Act*, Health Quality Ontario's mandate includes the provision of objective, evidence-informed advice about health care funding mechanisms, incentives, and opportunities to improve quality and efficiency in the health care system. As part of its Quality-Based Funding (QBF) initiative, Health Quality Ontario works with multidisciplinary expert panels (composed of leading clinicians, scientists, and administrators) to develop evidence-based practice recommendations and define episodes of care for selected disease areas or procedures. Health Quality Ontario's recommendations are intended to inform the Ministry of Health and Long-Term Care's Health System Funding Strategy.

For more information on Health Quality Ontario's Quality-Based Funding initiative, visit www.hqontario.ca.

Objective of Analysis

This review aimed to evaluate the role of 1) screening for respiratory syncytial virus (RSV) or influenza and 2) empirical antiviral treatment during flu season for hospitalized patients with community-acquired pneumonia (CAP).

Clinical Need and Target Population

Respiratory syncytial virus is one of the most common pathogens in hospitalized patients with CAP. (1) However, RSV is often not considered as a differential diagnosis. Further, clinicians also do not test for influenza in patients with CAP, and antiviral treatment is not administered. Delayed initiation of empirical therapy can be associated with mortality or treatment failure. (2)

Rapid Review

Research Question

Is there a role for 1) screening for RSV or influenza and 2) empirical antiviral treatment during flu season for patients with CAP?

Research Methods

Literature Search

A literature search was performed on June 27, 2013, using MEDLINE, MEDLINE In-Process and Other Non-Indexed Citations, Embase, and All Evidence-Based Medicine Reviews, for studies published from January 1, 2008, until June 27, 2013. Abstracts were reviewed by a single reviewer and, for those studies meeting the eligibility criteria, full-text articles were obtained.

Inclusion Criteria

- English-language full reports
- published between January 1, 2008, and June 27, 2013
- randomized controlled trials (RCTs), systematic reviews and meta-analyses, health technology assessments, and guidelines
- adult patients admitted to hospital with CAP

Exclusion Criteria

- studies that did not evaluate screening for RSV or influenza
- studies that did not evaluate empirical antiviral treatment during flu season

Outcomes of Interest

- mortality
- treatment or clinical failure

Expert Panel

In April 2013, an Expert Advisory Panel on Evidence-Based Episode of Care for Pneumonias Presenting to Hospitals was struck. Members of the panel included physicians, nurses, allied health professionals, and personnel from the Ministry of Health and Long-Term Care.

The role of the Expert Advisory Panel on Evidence-Based Episode of Care for Pneumonias Presenting to Hospitals was to place into context the evidence produced by Health Quality Ontario and to provide advice on the appropriate clinical pathway for a patient with pneumonia in Ontario health care. However, the statements, conclusions and views expressed in this report do not necessarily represent the views of Advisory Panel members.

Results of Literature Search

The database search yielded 1,137 citations published between January 1, 2008, and June 27, 2013 (with duplicates removed). Articles were excluded on the basis of information in the title and abstract. The full texts of potentially relevant articles were obtained for further assessment.

No RCTs, systematic reviews, meta-analyses, health technology assessments, or guidelines met the inclusion criteria.

Conclusions

No studies were included in this rapid review to evaluate the role of screening for RSV or influenza and the role of empirical antiviral treatment during flu season for hospitalized patients with CAP.

Acknowledgements

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HQO's Expert Advisory Panel on Evidence-Based Episodes of Care for Pneumonias Presenting to Hospitals

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Appendices

Appendix 1: Literature Search Strategies

Search date: June 27, 2013

Databases searched: MEDLINE, MEDLINE In-Process and Other Non-Indexed Citations, Embase; All Evidence-Based Medicine Reviews

Q: Is there a role for 1) screening for respiratory syncytial virus (RSV) or influenza and 2) empirical antiviral treatment during flu season for patients with community-acquired pneumonia?

Limits: 2008-current; English

Filters: Meta-analyses, systematic reviews, health technology assessments, RCTs and guidelines

Database: EBM Reviews - Cochrane Database of Systematic Reviews 2005 to May 2013, EBM Reviews - ACP Journal Club 1991 to June 2013, EBM Reviews - Database of Abstracts of Reviews of Effects 2nd Quarter 2013, EBM Reviews - Cochrane Central Register of Controlled Trials May 2013, EBM Reviews - Cochrane Methodology Register 3rd Quarter 2012, EBM Reviews - Health Technology Assessment 2nd Quarter 2013, EBM Reviews - NHS Economic Evaluation Database 2nd Quarter 2013, Embase 1980 to 2013 Week 25, MEDLINE(R) 1946 to June Week 3 2013, MEDLINE(R) In-Process & Other Non-Indexed Citations June 26, 2013

Search Strategy:

#	Searches	Results
1	exp Pneumonia/	251500
2	(pneumoni* or peripneumoni* or pleuropneumoni* or lobitis or ((pulmon* or lung*) adj inflammation*).ti,ab.	297932
3	or/1-2	411138
4	exp Respiratory Syncytial Viruses/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or exp Respiratory Syncytial Virus Infections/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed	8852
5	exp Respiratory syncytial pneumovirus/ use emez or exp Respiratory syncytial virus infection/ use emez	12560
6	exp Influenza, Human/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or influenza/ use emez or seasonal influenza/ use emez	81636
7	Antiviral Agents/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or antiviral agent/ use emez	110780
8	((respiratory adj syncytial adj virus*) or (respirosyncytial adj virus*) or rs visus* or RSV or flu or influenza* or grippe* or anti?viral* or viral inhibitor* or virostatic agent* or virucide* virus repressor* or virustatic* or (antivirus adj (agent* or drug* or virucidal* or substance*))).ti,ab.	321329
9	or/4-8	401354
10	3 and 9	36994
11	(Meta Analysis or Controlled Clinical Trial or Randomized Controlled Trial).pt.	891287

12	Meta-Analysis/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or exp Technology Assessment, Biomedical/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed	52618
13	Meta Analysis/ use emez or Biomedical Technology Assessment/ use emez (meta analy* or metaanaly* or pooled analysis or (systematic* adj2 review*) or published	83182
14	studies or published literature or medline or embase or data synthesis or data extraction or cochrane or ((health technolog* or biomedical technolog*) adj2 assess*).ti,ab.	365393
15	exp Random Allocation/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or exp Double-Blind Method/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or exp Control Groups/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or exp Placebos/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed	338408
16	Randomized Controlled Trial/ use emez or exp Randomization/ use emez or exp RANDOM SAMPLE/ use emez or Double Blind Procedure/ use emez or exp Triple Blind Procedure/ use emez or exp Control Group/ use emez or exp PLACEBO/ use emez	619195
17	(random* or RCT or placebo* or sham* or (control* adj2 clinical trial*).ti,ab.	2137623
18	exp Standard of Care/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or exp Guideline/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed or exp Guidelines as Topic/ use mesz,acp,cctr,coch,clcmr,dare,clhta,cleed	133720
19	exp Practice Guideline/ use emez or exp Professional Standard/ use emez	550823
20	(guideline* or guidance or consensus statement* or standard or standards).ti.	238162
21	or/11-20	3712642
22	10 and 21	4538
23	limit 22 to english language [Limit not valid in CDSR,ACP Journal Club,DARE,CCTR,CLCMR; records were retained]	4168
24	limit 23 to yr="2008 -Current" [Limit not valid in DARE; records were retained]	1481
25	remove duplicates from 24	1174

References

- (1) Dowell SF, Anderson LJ, Gary HE Jr, Erdman DD, Plouffe JF, File TM Jr, et al. Respiratory syncytial virus is an important cause of community-acquired lower respiratory infection among hospitalized adults. *J Infect Dis.* 1996 Sep;174(3):456-62.
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