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CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

# Management of Patients Presenting with Pneumonia in the Emergency Department: Guidelines


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| Service Line: | Rapid Response Service |
| Version: | 1.0 |
| Publication Date: | February 13, 2020 |
| Report Length: | 7 Pages |

CADTH

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**Cite As:** Management of patients presenting with pneumonia in the emergency department: guidelines. Ottawa: CADTH; 2020 Feb. (CADTH rapid response report: summary of abstracts).



**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**

## Research Question

What are the evidence-based guidelines regarding admittance of patients presenting with pneumonia in the emergency department?

## Key Findings

Three evidence-based guidelines were identified regarding the admittance of patients presenting with pneumonia in the emergency department.

## Methods

A limited literature search was conducted by an information specialist on key resources including Medline via OVID 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 pneumonia and emergency services. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, or network meta-analyses, and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2015 and January 31, 2020. 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

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| **Population** | Adult and pediatric patients presenting with pneumonia in the emergency department |
| **Intervention** | Emergency department admission for treatment |
| **Comparator** | No comparator |
| **Outcomes** | Recommendations for admission and discharge (i.e., guidelines for when it is appropriate to admit as an emergency department patient vs. discharge to an outpatient setting) |
| **Study Designs** | Evidence-based guidelines |

## Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Normally, health technology assessment reports, systematic reviews, and meta-analyses are presented first; however, in reports where guidelines are primarily sought, the aforementioned evidence types are presented in the appendix.

Three evidence-based guidelines[1-3] were identified regarding the admittance of patients presenting with pneumonia in the emergency department.

Additional references of potential interest are provided in the appendix.

## Overall Summary of Findings

Three evidence-based guidelines[1-3] were identified regarding the admittance of patients presenting with pneumonia in the emergency department.

Guidelines from American Thoracic Society Documents and Infectious Diseases Society of America[1] recommend utilizing clinical judgement in conjunction with a validated clinical prediction rule for prognosis (preferably the Pneumonia Severity Index over the CURB-65 [a tool based on confusion, urea level, respiratory rate, blood pressure, and age over 65]) in order to determine the need for hospital admission in adults diagnosed with community acquired pneumonia (CAP).

Alternatively, guidelines from the National Institute of Healthcare Excellence (NICE)[2,3] recommend that, in addition to clinical judgement, physicians use the CURB65 score to guide the management of CAP. The guideline published by NICE regarding diagnosis and management of pneumonia in adults[2] recommends that a patient with CAP receives hospital-based care if they have a CURB-65 score of 2 or more and intensive-care assessments if they have a CURB-65 score of 3 or more. The guideline from NICE also recommends that physicians do not discharge patients with CAP if they have two or more of the following findings in the past 24 hours: a body temperature higher than 37.5°C, a respiratory rate of 24 breaths per minute or more, a resting heart rate over 100 beats per minute, systolic blood pressure of 90 mmHg or less, oxygen saturation under 90% measured in room air, an abnormal mental status, or an inability to eat without assistance.[2]

## References Summarized

### Guidelines and Recommendations

1. Metlay JP, Waterer GW, Long AC, et al. Diagnosis and treatment of adults with community-acquired pneumonia. New York (NY): American Thoracic Society; 2019: https://www.atsjournals.org/doi/pdf/10.1164/rccm.201908-1581ST. Accessed 2020 Feb 12.
   *See: Question 6, page e52*

2. National Institute for Health Care and Excellence. Pneumonia in adults: diagnosis and management *(Clinical guideline CG191)*. 2019; https://www.nice.org.uk/guidance/cg191/chapter/1-Recommendations. Accessed 2020 Feb 13.
   *See: Severity Assessment in Hospital, 1.2.4; Safe Discharge from Hospital, 1.2.20*

3. National Institute for Health Care and Excellence. Emergency and acute medical care in over 16s: service delivery and organisation - chapter 21 standardised criteria for hospital admission *(NICE guideline NG94)*. 2018; https://www.nice.org.uk/guidance/ng94/evidence/21standardised-criteria-for-hospital-admission-pdf-172397464634. Accessed 2020 Feb 13.
*See: Recommendations, page 16*

# Appendix — Further Information

## Previous CADTH Reports


4. Screening and post-treatment follow-up chest x-rays for chest infections: clinical and cost-effectiveness and guidelines. *(CADTH Rapid response report: summary of abstracts)*. Ottawa (ON): CADTH; 2015: https://www.cadth.ca/screening-and-post-treatment-follow-chest-x-rays-chest-infections-clinical-and-cost-effectiveness-0. Accessed 2020 Feb 13.

5. Streptococcal antigen test for pneumonia detection: a review of clinical- and cost-effectiveness and guidelines. *(CADTH Rapid response report: summary with critical appraisal)*. Ottawa (ON): CADTH; 2015: https://cadth.ca/streptococcal-antigen-test-pneumonia-detection-review-clinical-and-cost-effectiveness-and-guidelin-0. Accessed 2020 Feb 13.

6. Screening tools for the emergency department: clinical evidence and guidelines. *(CADTH Rapid response report: summary of abstracts)*. Ottawa (ON): CADTH; 2010; https://www.cadth.ca/screening-tools-emergency-department-clinical-evidence-and-guidelines-0. Accessed 2020 Feb 13.


## Clinical Practice Guidelines


7. Le Saux N, Robinson JL, Canadian Paediatric Society, Infectious Diseases and Immunization Committee. Uncomplicated pneumonia in healthy Canadian children and youth: practice points for management. Ottawa (ON): Canadian Paediatric Society; 2018: https://www.cps.ca/en/documents/position/pneumonia-management-children-youth. Accessed 2020 Feb 13.
   *See: Guidelines for referral to hospital or hospital admission*

8. Provincial clinical knowledge topic community acquired pneumonia, pediatric – emergency and inpatient v 1.0. Edmonton (AB): Alberta Health Services; 2018: https://extranet.ahsnet.ca/teams/policydocuments/1/klink/et-klink-ckv-community-acquired-pneumonia-pediatric-emergency-and-inpatient.pdf. Accessed 2020 Feb 13.

9. Community-acquired pneumonia in adults. Montreal (QC): INESSS; 2017: https://www.inesss.qc.ca/fileadmin/doc/INESSS/Outils/GUO/Anglo/Guide_Pneumo_Adulte_EN_Web.pdf?sword_list%5B0%5D=pneumonia&no_cache=1. Accessed 2020 Feb 13.

10. American College of Emergency Physicians Clinical Policies Subcommittee (Writing Committee) on Pediatric Fever. Clinical policy for well-appearing infants and children younger than 2 years of age presenting to the emergency department with fever. *Ann Emerg Med.* 2016;67:625-639. https://www.acep.org/globalassets/new-pdfs/clinical-policies/pedi-fever.pdf. Accessed 2020 Feb 13.
    *See: Question 3, page 632 to 633*

11. Community-acquired pneumonia in children 3 months of age or older. Montreal (QC): INESSS; 2016: https://www.inesss.qc.ca/fileadmin/doc/INESSS/Outils/GUO/Anglo/Guide_Pneumo_Enfant_EN_WEB.pdf?sword_list%5B0%5D=pneumonia&no_cache=1. Accessed 2020 Feb 13.

12. Royal Children's Hospital Melbourne. Community acquired pneumonia. 2016; https://www.rch.org.au/clinicalguide/guideline_index/Community_acquired_pneumonia/ . Accessed 2020 Feb 13.
*See: Management and Discharge Criteria & Follow up*

## Review Articles

13. Lim TK, Chew MY. Management of severe community acquired pneumonia in the emergency department. *JECCM*. 2018;2(1). http://jeccm.amegroups.com/article/view/4015/4635. Accessed 2020 Feb 13.

14. Phua J, Dean NC, Guo Q, Kuan WS, Lim HF, Lim TK. Severe community-acquired pneumonia: timely management measures in the first 24 hours. *Crit Care*. 2016;28;20:237.
PubMed: PM27567896