

2.4 Percentage of adult patients with community acquired pneumonia that are assessed using an appropriate validated objective measure of pneumonia severity

Purpose

This indicator addresses effectiveness of processes that promote judicious selection of treatment choices for patients with community acquired pneumonia (CAP).

Background and evidence

There are a number of objective measures of pneumonia severity designed to assist in guiding pneumonia management. Severity-of-illness scores, such as the CURB-65¹ criteria, or prognostic models, such as the Pneumonia Severity Index (PSI)², can be used to identify patients with CAP who may be candidates for outpatient treatment³ as well as guide selection of antibiotic therapy. In Australia, the PSI has been most widely used and is recommended by *Therapeutic Guidelines: Antibiotic*.⁴

Key definitions

Adult patients with community acquired pneumonia refers to all patients aged 18 years and over who present to the emergency department (ED) or are directly admitted to the hospital with CAP. Patients presenting to ED may be subsequently admitted to the hospital or transferred back to the community for community care.

An appropriate validated objective measure of pneumonia severity refers to use of the CURB-65⁵ or PSI² tools or other validated objective measures of severity. The tool(s) used for severity assessment may be determined at a hospital level, but should be endorsed by the Drug and Therapeutics Committee or other appropriate committee. Pneumonia severity should be objectively assessed and explicitly documented prior to administration of antibiotics.

Validated means the tool has been tested for inter-rater reliability when used according to specific instructions.

Assessed means there is explicit documentation in the medical record of the tool used and the resultant score.

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Data collection for local monitoring

Recommended sample selection: A random sample of patients who presented to the ED with CAP over a one-month period. Patients may be identified retrospectively or prospectively depending on local information systems. Random means each patient has an equal chance of inclusion in the audit.

Recommended sample size: Based on international work⁶ the following sample sizes are recommended:

Average no. of CAP patients / month	Minimum sample size required / month
401 or more	81
100-400	20% of patients presenting with CAP
20-99	20
Less than 20	All CAP patients

Recommended methodology: Review of medical records including emergency department records.

Data collection for inter-hospital comparison

This indicator may be suitable for inter-hospital comparison. In this case, definitions, sampling methods and guidelines for audit and reporting need to be agreed in advance in consultation with the coordinating agency.

Indicator calculation

$$\frac{\text{Numerator}}{\text{Denominator}} \times 100\%$$

Numerator = Number of adult patients with CAP that were assessed using an appropriate validated objective measure of pneumonia severity

Denominator = Number of patients presenting with CAP in sample

Limitations and interpretation

The objective assessment tools described in this indicator have been validated for use in adults, but are not suitable for use in children. Paediatric patients are therefore excluded from this indicator, although the systematic assessment of pneumonia severity remains important in these patients.

Severity assessment should help guide appropriate treatment options, including the choice of antibiotic therapy for CAP. See indicator 2.5 *Percentage of patients presenting with community acquired pneumonia that are prescribed guideline concordant antibiotic therapy* for further information regarding appropriate antibiotic therapy. It is recommended that these indicators be collected concurrently where possible.

Further information

The *Medication Safety Self Assessment for Australian Hospitals*⁷ (MSSA) can help identify potential strategies for improvement with this and other indicators. The MSSA encourages development of robust systems for safe prescribing, dispensing, administration and monitoring of medications. The MSSA is available at www.cec.health.nsw.gov.au

References

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