2.5 Percentage of patients presenting with community acquired pneumonia that are prescribed guideline concordant antibiotic therapy

Purpose

This indicator addresses the effectiveness of processes that encourage appropriate antibiotic selection in patients with community acquired pneumonia (CAP).

Background and evidence

Antibiotic prescribing for patients who present to hospital with CAP is often not concordant with Australian guidelines.[1] In adults, validated severity assessment tools[2-4] can be used to help select the most appropriate empirical antibiotic therapy and determine which patients may be candidates for outpatient treatment or intensive respiratory or vasopressor support.[5] In children appropriate choice of antibiotics is usually determined after consideration of age and clinically assessed severity.[5]

The Therapeutic Guidelines: Antibiotic[5] (TG) gives recommendations for treatment of CAP in general patient populations. Specific advice regarding antibiotic treatment of CAP is also given for: populations in some regions of tropical Australia; patients in rural and remote areas; patients at risk of *Burkholderia pseudomallei* and *Acinetobacter baumannii*; patients with Gram-negative bacilli in sputum/blood and patients hypersensitive to penicillin.

Key definitions

Patients presenting with community acquired pneumonia refers to patients of all ages 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.

Guideline concordant antibiotic therapy refers to concordance with the latest version of the TG.

In some hospitals, local infection and resistance patterns may justify the use of guidelines that differ from the TG. In this case, locally endorsed guidelines must be evidence-based, systematically developed, and approved for local use by the hospital's drug and therapeutics committee in order to be a suitable alternative to the TG.

Data collection for local use

Please refer to the section *Using the National Quality Use of Medicines Indicators for Australian Hospitals* for guidance on sample selection, sample size, measurement frequency and other considerations.

Inclusion criteria: Adult, and paediatric patients who present to the ED or are directly admitted to the hospital with CAP.

Exclusion criteria: Nil.

Recommended data sources: Medical records and medication charts.

The data collection tool for QUM Indicator 2.5 assists data collection and indicator calculation.

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 patients presenting with CAP that are prescribed guideline concordant antibiotic therapy

Denominator = Number of patients presenting with CAP in sample

Limitations and interpretation

At times there may be clinical reasons for prescribing a different antibiotic to that recommended by guidelines. Determining such circumstances retrospectively is complicated and requires clinical judgement. Since this is likely to apply for only a small number of patients these instances are not accounted for. Where there is concern about results, it may be appropriate to look more closely at these details.

Choice of antibiotic therapy and place of treatment should be guided by an objective assessment of pneumonia severity. For further information regarding CAP severity assessment, see *Indicator 2.4: Percentage of adult patients with community acquired pneumonia that are assessed using an appropriate validated objective measure of pneumonia severity*. It is recommended that Indicators 2.4 and 2.5 are collected concurrently where possible.

Further information

Medication Safety Self Assessment for Australian Hospitals[6] (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 medicines. The MSSA is available at **www.cec.health.nsw.gov.au**

This indicator can be used to assist hospitals in meeting the National Safety and Quality Health Service Standard 1 [items 1.2.1, 1.2.2, 1.5.2, 1.6.1, 1.6.2, 1.7.2], Standard 3 [items 3.1.1, 3.1.2, 3.4.1, 3.4.2, 3.4.3, 3.14.1, 3.14.3, 3.14.4] and Standard 4 [items 4.2.1, 4.2.2, 4.5.1, 4.5.2].[7]

References

1. Maxwell DJ, McIntosh KA, Pulver LK, et al. Empiric management of community-acquired pneumonia in Australian emergency departments. Med J Aust 2005; 183: 520-524.

2. Buising KL, Thursky KA, Black JF, et al. Identifying severe community-acquired pneumonia in the emergency department: a simple clinical prediction tool. Emerg Med Australas 2007; 19: 418-426.

3. Charles PG, Wolfe R, Whitby M, et al. SMART-COP: a tool for predicting the need for intensive respiratory or vasopressor support in community-acquired pneumonia. Clin Infect Dis 2008; 47: 375-384.

4. Robins-Browne KL, Cheng AC, Thomas KA, et al. The SMART-COP score performs well for pneumonia risk stratification in Australia's Tropical Northern Territory: a prospective cohort study. Trop Med Int Health 2012; 17(7): 914-919.

5. Antibiotic Expert Groups. Therapeutic guidelines: antibiotic. Version 15. Melbourne: Therapeutic Guidelines Limited; 2014.

6. Medication Safety Self Assessment for Australian Hospitals: Institute for Safe Medication Practices USA (Adapted for Australian use by NSW Therapeutic Advisory Group and the Clinical Excellence Commission), 2007.

7. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards. Sydney, ACSQHC, 2012.