

Introduction

CAPTION (Community-Acquired Pneumonia: Towards Improving Outcomes Nationally) is a national quality improvement initiative aimed at improving the management of community-acquired pneumonia (CAP) in Australian emergency departments. Current evidence suggests that knowledge of and adherence to guidelines for the treatment of CAP is suboptimal.¹

This two-year project engaged the expertise of state-based drug use evaluation (DUE) groups from Victoria, New South Wales, Tasmania, South Australia and Queensland.

Aims

- To introduce and implement the CAP recommendations of the *Therapeutic Guidelines: Antibiotic, Version 12, 2003* in 37 Australian hospital emergency departments.
- To train health professionals in the use of social marketing (academic detailing) techniques to influence and improve prescribing practice, including diagnostic scoring and appropriate antibiotic selection, in the area of interest.

Methods

National and state project teams were formed in consultation with stakeholders. Each participating hospital nominated a project coordinator responsible for local activity and worked with a state project team. The following key messages were formulated based on the *Guidelines*.

- Use a systematic approach to assessing severity
- Select antibiotic therapy according to severity
- Penicillins are first choice for non-severe CAP
- Consider atypical pneumonias when deciding on antibiotic regimen

A suite of educational interventions was used including:

- academic detailing (trained hospital personnel deliver key messages in a 1:1 session with prescribers)
- group education sessions (PowerPoint presentations intended to provide educational feedback)
- prescribing prompts (wall poster, Pneumonia Severity Index [PSI] sticker, ID card reminder).

Two drug use evaluation cycles were conducted (a full cycle consists of audit/feedback, educational intervention and evaluation). CAP management recommendations of the *Guidelines* were introduced and implemented through the educational intervention.

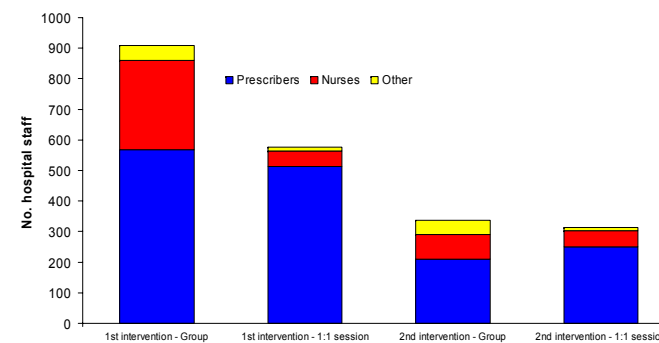
The impact of interventions was measured using two key indicators:

- Documented use of the PSI
- Concordant antibiotic prescribing.

Results

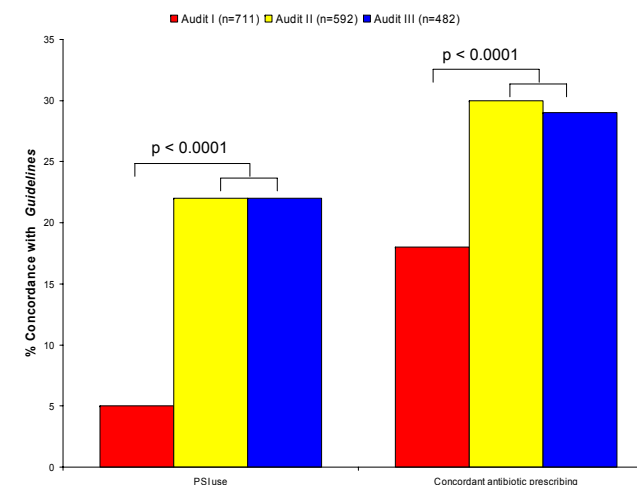
A total of 37, 31 and 27 hospitals participated in Audits I, II and III respectively. Patient demographics for all three audits were similar, although Audit III included more severe cases of CAP and hence slightly higher inpatient mortality.

Figure 1: Number of hospital personnel who participated in each education intervention, group sessions and academic detailing (1:1).



The mean duration of an academic detailing session was 12 minutes, while the group session mean duration was 26 minutes.

Figure 2: Overall impact of educational interventions.



There was a significant increase in the use of the PSI in Audits II and III compared with baseline (Audit I). A significant improvement in concordant antibiotic prescribing was seen after the first intervention and sustained after the second intervention. Although much more work remains to be done in both areas. Baseline data were published in *Med J Aust* 2005;186:520–524.

Table 1: Empiric antibiotic therapy

Antibiotics prescribed	Audit I (n = 711)	Audit II (n = 592)	Audit III (n = 482)
Monotherapy (excluding moxifloxacin)	22%	17% (p < 0.05)	18%
Dual therapy β-lactam + macrolide or doxycycline	65%	75% (p < 0.05)	77% (p < 0.05)

The results demonstrate a significant reduction in prescribing of single antibiotics and increased use of dual antibiotic therapy as recommended by the *Guidelines* for CAP patients.

The most common reason for discordance with the *Guidelines* was incorrect selection of antibiotics. After education, there was a 3% reduction in prescriptions of broad-spectrum antibiotics (e.g. ceftriaxone, cefotaxime) and increased use of narrow spectrum β-lactam penicillins (e.g. amoxicillin, benzylpenicillin). Even after education, there was continued prescribing of incorrect alternative antibiotics for CAP patients with penicillin allergy.

Enablers identified as key features of success are:

- Multi-faceted intervention strategies
- Commitment of hospital personnel
- Involvement of a local key opinion leader
- National collaboration through the state-based DUE groups.

Barriers included a high turnover of emergency staff, time constraints and varying opinions of the *Guidelines*.

Conclusions

- A suite of tailored interventions, including academic detailing, were moderately successful at influencing antibiotic prescribing practice and use of the PSI in emergency departments.
- The CAPTION project raised the profile and importance of conducting quality improvement initiatives within participating hospitals.

Beyond CAPTION

A number of hospitals are continuing CAPTION using updated education materials and are conducting a follow-up audit of CAP management in 2006. Workshops for general practitioners and local hospital specialists are currently underway.

References

- Robertson MB, et al. Antibiotic treatment of lower respiratory tract infection in emergency departments. Victorian Drug Use Evaluation Group, Victoria, May 2003.

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