

Antibiotic guidelines in NSW hospitals

David J Maxwell, Kylie L Easton, Jo-anne E Brien and Karen I Kaye

THIS PAPER REPORTS THE RESULTS of a preliminary survey which investigated antibiotic guideline use and the strategies used to implement and evaluate guideline use in NSW hospitals. We were interested in assessing the extent to which well established guidelines of proven value are being used in a sample of hospitals, as one way to measure implementation of the principles of clinical governance.

Defining terms

Clinical governance is defined as “the framework through which organisations are accountable for continuously improving the quality of their services, safeguarding high standards of care and creating an environment in which excellence in clinical care will flourish”,¹ (page 62) and NSW Health has adopted a local framework for clinical governance.²

The quality of health care can be described as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.³ A recognised method of improving quality in health care is the use of guidelines, which incorporate current professional knowledge into the clinical practice

What is known about the topic?

Guidelines can be an effective tool for reducing inappropriate drug use and improving the quality of health care. The use of antibiotic guidelines has led to reduction of antibiotic drug costs and reduction in the promotion of resistant organisms.

What does this paper add?

Nearly 80% of surveyed NSW hospitals are using antibiotic prescribing guidelines. Implementation strategies are varied, and only a small number of hospitals are evaluating implementation processes and current antibiotic prescribing practice. Hospitals which did report an evaluation program used Drug Use Evaluation (DUE) methodology.

What are the implications?

The uptake and implementation of antibiotic guidelines in the hospital system can be improved. Evaluation of guideline implementation and prescribing practice using DUE should be supported within a framework of clinical governance.

David J Maxwell, BPharm, DipHospPharm, Project Officer
Karen I Kaye, BPharm, DipHospPharm, Executive Officer
NSW Therapeutic Advisory Group, Sydney, NSW.

Kylie L Easton, BPharm, BPharmSciHons,
GradDipClinPharm, PhD, Education and Quality Assurance
Program Officer

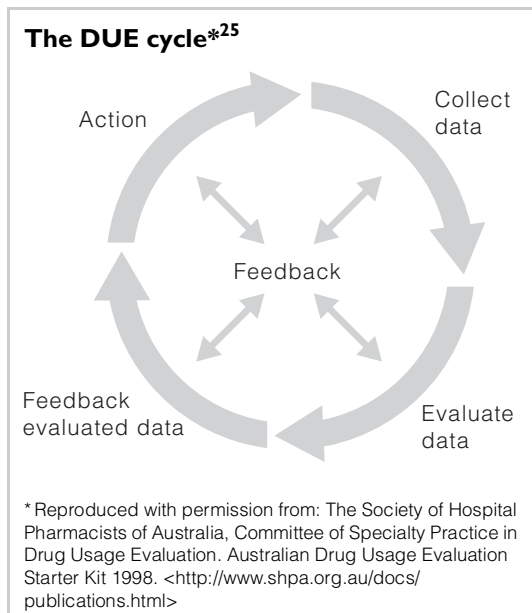
National Prescribing Service, Sydney, NSW.

Jo-anne E Brien, BPharm, BS(Pharm), PharmD, Pfizer
Australia Chair in Clinical Pharmacy (St Vincent's Hospital)
Faculty of Pharmacy, The University of Sydney, Sydney, NSW.

Correspondence: Mr David J Maxwell, NSW Therapeutic
Advisory Group, Level 5, 376 Victoria Street, Darlinghurst,
Sydney, NSW 2010. tagproject@stvincents.com.au

setting.⁴ Within the NSW clinical governance framework, acceptance and use of guidelines would provide a “standard of care” for health professionals, and would be useful in the process of reviewing and improving clinical outcomes.

“Guidelines”, “Clinical Guidelines” or “Practice Guidelines” have been defined as systematically developed statements designed to assist practitioner decisions about appropriate health care for specific clinical circumstances.⁵ It is widely accepted that use of guidelines may assist in the improvement of clinical care through the promotion of interventions of proven benefit and discouragement of ineffective interventions.^{4,6} Many guidelines have been published encompassing various therapeutic areas, for example, asthma,⁷ acute pain,⁸ community-acquired pneumonia⁹ and antibiotic use.¹⁰ Implementation of antibiotic guidelines has been demonstrated to be an effective tool in improving appropriate antibiotic prescribing,^{11,12} reducing overall antibiotic drug



costs¹³ and reducing the promotion of resistant organisms.¹⁴ National Australian antibiotic guidelines (Therapeutic Guidelines: Antibiotic [TG:AB]) have been available for more than 25 years and are available in NSW hospitals via on-line decision support systems (Clinical Information Access Program).

The problem of implementation

It is well recognised that the development and distribution of guidelines alone is of limited value in terms of effecting improvements in health care.^{15,16} Well designed, sustainable implementation and evaluation strategies are required to ensure the effective use of guidelines in the clinical setting. A number of "guidelines for guidelines" have been published,¹⁷⁻²¹ including a detailed framework published by the National Health and Medical Research Council (NHMRC).²² The NHMRC recommends health organisations establish a systems approach that "integrates guidelines into their local delivery processes", "... involving sensible use of resources, developing sustainable infrastructure, integrating available resources and strategies, and adapting to local needs".²² (page 7) A number of

specific intervention strategies are identified by the NHMRC, including use of opinion leaders, educational interventions, and reminder systems incorporated into routine practice. It is understood that no one particular intervention is more effective than another, and multifaceted interventions are recommended.²³

Evaluation of guideline validity and the effectiveness of implementation through methods such as Drug Use Evaluation (DUE) is essential. DUE has been defined as a systematic review of all aspects of drug use with the specific objectives of ensuring the quality use of medicines (QUM),* improving patient care and promoting cost-effective drug use.²⁴ It has also been described as a quality assurance/management activity for drug therapy, to promote optimal drug therapy for all patients.²⁵ DUE uses an iterative quality improvement cycle that includes data collection, data evaluation, feedback and intervention (see Box).²⁶ DUE methodology has been applied in a number of ways: within individual institutions investigating local prescribing habits,^{27,28} across multiple institutions in collaborative multicentre projects,^{29,30} as well as across states in national collaborative projects.³¹

As part of a multicentre DUE project, CAPTION (Community-Acquired Pneumonia: Towards Improving Outcomes Nationally),³¹ the NSW Therapeutic Advisory Group conducted a preliminary survey to investigate antibiotic guideline use, and the strategies used to implement and evaluate guideline use, in NSW hospitals.

Aims

- To identify and describe the extent of antibiotic guideline use in NSW hospitals.
- To describe the implementation and evaluation strategies for antibiotic guideline use in NSW hospitals.

* Quality use of medicines (QUM) involves judicious selection of treatment options (including choice between drug, non-drug and no treatment), appropriate choice of medicines when medicine is required, safe and efficacious use of medicine and cost-effective use of medicines.

Method

A brief questionnaire, consisting of a combination of closed- and open-ended questions, was distributed electronically to all members of the NSW Therapeutic Advisory Group network in October 2003. The network represents Drug and Therapeutics Committees from 52 public hospitals in NSW, including all principal referral, paediatric specialist, major metropolitan and major non-metropolitan public hospitals with a Drug and Therapeutics Committee, and some district hospitals.³² A reminder notice was circulated 4 weeks later. Responses were collated and summarised.

Results

Completed questionnaires were returned from 29 hospitals in the NSW Therapeutic Advisory Group network, a 56% (29/52) response rate. Of these, 79% (23/29) of hospitals reported using the TG:AB¹⁰ as a basis for antibiotic prescribing recommendations within their institution. The remaining 6 hospitals (21%) indicated that they did not use any guidelines for antibiotic prescribing within their institution.

Of the 23 hospitals that reported using the TG:AB, seven (30%) reported using additional "in-house" guidelines. The in-house guidelines were recommendations written and/or endorsed by local opinion leaders for specific antibiotic use that differed to the recommendations in the TG:AB.

Twelve hospitals reported using a number of different implementation strategies to promote the effective use of the guidelines. Strategies included prescriber education sessions (eg, grand-round sessions, ward talks and one-on-one visits conducted by clinical pharmacists); newsletters and drug bulletins; decision support tools (eg, short cuts to guidelines on computer desk tops, wall posters and identification-card sized summaries of common infections and recommended antibiotic therapy); and antibiotic prescribing restrictions. Ward talks and antibiotic prescribing restrictions were the most frequently used intervention strategies.

Restriction of antibiotic use was achieved through the removal of certain antibiotics from ward areas and/or the hospital formulary; limiting prescription of specific antibiotics to particular areas or specialties; and a requirement for prior approval by the Microbiology/Infectious Diseases (ID) team for specific antibiotics before dispensing. In one hospital, antibiotic approvals were documented on medication orders through the use of unique approval codes issued by the ID team.

Evaluation of antibiotic prescribing was reported in five hospitals. All five hospitals utilised DUE methodology, although the exact design of the data collection process varied. Antibiotic prescribing data were collected on a single day or over a 1-week period in some hospitals, continuously over a 1- to 6-month period in other hospitals, and also at regular intervals as part of an integrated, continuous DUE program in one hospital. Results of the DUEs were used as feedback to prescribers in the education sessions described above.

Wide acceptance of TG:AB, but inconsistent implementation

This preliminary survey demonstrates that the TG:AB are widely acknowledged as the basis for antibiotic prescribing recommendations across NSW public hospitals. However, interventions to implement such guidelines are varied and inconsistent, and evaluation of the effectiveness of these interventions is not common practice. It is acknowledged that these results may be limited by the overall response rate (56%) and exclusion of private hospitals from the survey.

It is encouraging that 79% of respondents acknowledged this widely available national set of antibiotic guidelines¹⁰ as the basis for antibiotic prescribing. This is higher than results of a national survey of Australian hospitals in 1985, in which 58% of hospitals reported using antibiotic policies or guidelines.³³ However, it is lower than a more recent survey, conducted in the Netherlands in 1999, that reported 90% of Dutch hospitals use antibiotic guidelines.³⁴

Unfortunately, our preliminary survey did not explore the question of why in-house guidelines were used in some hospitals. However, the TG:AB acknowledges that “in hospitals the choice of which drugs are used may be influenced by such local factors as trends in susceptibility of current isolates, costs of the drugs and ... traditional practice or familiarity”.¹⁰ (page 1)

Barriers to implementation

It is of interest and concern that 21% of hospitals in this survey reported not using any guidelines for antibiotic prescribing. This should not be interpreted to mean that all antibiotic prescribing in these institutions would be inappropriate. However, without any accepted standards for antibiotic use, there is greater potential for inappropriate variations in antibiotic prescribing for certain indications, and for the development of resistant organisms.^{14,35}

A number of barriers to guideline use have been identified in the literature that may explain the lack of uptake by hospitals. Barriers include feelings of lack of ownership, constraint, loss of flexibility and loss of professional autonomy,³⁶⁻³⁸ beliefs that following guidelines is time consuming, burdensome and irrelevant to patient care,^{4,36,39,40} as well as lack of knowledge and commitment to pre-existing physician practices.¹⁸ At a local level, leaders of clinical governance should ensure that such barriers are identified and addressed to ensure that guidelines are an effective tool in the overall process of reviewing and improving practice.

Implementation strategies

Various guideline implementation strategies were reported by respondents, but not all hospitals using antibiotic guidelines had implementation strategies in place. A number of implementation strategies have been identified in the literature, including system-based interventions and models, educational and persuasive strategies, information provision support and decision support tools.^{22,26} Specific strategies used by hospitals

may be influenced by the resources and time available. It has been acknowledged that when promoting and/or implementing clinical guidelines, the “size and complexity of the organisation will affect the feasibility of different strategies”.¹⁸

Evaluation of guideline use and prescribing practice

Evaluation of guideline use and prescribing practice is essential,²² and should not be considered as an “extra” activity. In this survey, only five of the 23 hospitals using antibiotic guidelines reported using the DUE methodology, the only approach to evaluation reported. A number of Australian organisations have developed resources to support health care professionals interested in DUE, including the NSW Therapeutic Advisory Group DUE Support Group, the Society of Hospital Pharmacists of Australia Committee of Specialty Practice in DUE, and the DUE Network of the Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists. Resources include a starter kit,²⁵ standards of practice⁴¹ and a support network that meets on a regular basis.⁴²

Dartnell²⁶ has described the use of DUE to evaluate guideline use across a number of therapeutic areas, such as anticoagulation, ulcer-healing therapy and management of chronic obstructive pulmonary disease pain management. DUE has also been used to evaluate prescribing in pain management²⁹ and antibiotics.

DUE activities should be undertaken as part of a formal DUE program⁴¹ that plays an integral part in the overall, continuous, patient care review system within the hospital setting. A successful DUE program requires clinical leadership and high level administrative support, and should operate under the oversight and endorsement of the local Drug and Therapeutics Committee.^{26,41} Adequate funding should also be allocated to support and maintain DUE programs. Current financial constraints within Australian hospitals have limited the development of such programs.

Conclusion

Antibiotic guideline use is widespread but inconsistent across NSW hospitals. Implementation strategies are varied. Evaluation of guideline implementation/antibiotic prescribing is far from universal, and continuous evaluation was only reported by one hospital. DUE is an established and proven evaluation tool that has been used to promote guideline use and improve QUM. DUE programs should be considered an essential component of any quality improvement program in NSW hospitals, as part of the overarching clinical governance framework. Leaders of clinical governance should be aware of local barriers to guideline use, ensuring that governance strategies address such issues.

Competing interests

The authors declare that they have no competing interests.

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