



Symposium 9.2

Managing antibiotic prescribing – the nuts and bolts

Keryn Christiansen

PathWest Laboratory Medicine
Royal Perth Hospital, Western Australia

In Australia control of antimicrobial prescribing starts with the National registration process. The Australian Drug Evaluation Committee provides advice on efficacy and safety to the Therapeutics Goods Administration. Since 2001 the TGA has also requested advice from the Expert Advisory Group on Antimicrobial Resistance (EAGAR) another government advisory committee. EAGAR specifically addresses resistance selection potential for any new antimicrobial or new indication for an already registered agent. EAGAR has a second opportunity for input during the regulatory process – namely through the Pharmaceutical Benefits Advisory Committee – when application is made to have an antimicrobial subsidised through the Government Pharmaceutical Benefits Scheme. Also at the national level is the biennial publication, Therapeutic Guidelines – Antibiotic. These guidelines are evidence based where possible and target both community and hospital practice.

The real 'nuts and bolts' used to control antimicrobial prescribing at the hospital level is varied. Based on personal experience at the Royal Perth Hospital the elements of an Antibiotic Stewardship Program (ASP) are presented. Leadership for the program is via the Antibiotic Stewardship Committee (ASC), composed of an Infectious Diseases Physician, Clinical Microbiologist, Infectious Diseases Pharmacist, Infection Control Practitioner, General Physician, Emergency Medicine Physician, Intensive Care Specialist and the coordinator of the Drug Usage and Assessment Group. The ASC reports to the hospital Drug Committee. The goals of the program are to optimise patient outcome, decrease antimicrobial resistance selection, decrease adverse drug reactions, and decrease selection of other pathogens such as *Clostridium difficile*. The program consists of

- Daily antimicrobial stewardship rounds that provides advice and feedback on drug choice, dose, route and duration. An infectious diseases physician and infectious disease pharmacist conduct the round. Although the aim of the stewardship round is primarily to reduce antimicrobial resistance selection, cost effectiveness has been demonstrated.
 - Monitoring antimicrobial usage data for trends on increasing use of specific agents. The data are benchmarked against 23 tertiary referral hospitals around Australia
 - Monitoring agents with high potential for toxicity.
 - Antimicrobial usage audits for both specific agents and specific infections
 - De-escalation of therapy initiatives such as change to narrow spectrum directed therapy and IV to oral switch.
 - Clinical guidelines and protocol development
 - Education. Mainly on a one-to-one basis during stewardship rounds
- Two other elements of the program are under review and will be introduced in the near future
- Analysis of antimicrobial susceptibility data
 - A computerised order entry system

In addition certain antimicrobial agents (high importance, high cost) on the hospital formulary are restricted and have to be approved by an Infectious Diseases Physician or Clinical Microbiologist. An in-house computerised approval system is used and approvals are given around the clock. Further restriction is applied by laboratory antimicrobial reporting practices.

Measurement of outcomes of the program such as advice followed, adherence to guidelines, antibiotic use and cost are undertaken. The impact on antimicrobial resistance is more difficult measure.