How education influences prescribing at John Hunter Hospital

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The problem
The overuse of broad spectrum antibiotics, including the ‘third generation’ cephalosporins such as cefotaxime or ceftriaxone, has been linked to the emergence of multiresistant organisms.1 These include vancomycin resistant enterococci (VRE), methicillin resistant Staphylococcus aureus (MRSA) and an increase in the incidence of opportunistic pathogens such as Clostridium difficile.2 Such an increase in nosocomial C. difficile was noted in John Hunter Hospital, a tertiary referral centre, towards the end of 1997. If not clinically warranted these cephalosporins are often a more expensive option for treatment than alternatives.

The strategy
Educational initiatives designed to alter prescribing habits can be more effective and better accepted in many settings than a totally proscriptive approach.

The strategy used at the John Hunter Hospital involved a multifaceted approach. A working party, looking specifically at the use of anti-infective drugs, was formed to encourage compliance with the prescribing guidelines published in the Antibiotic Guidelines3 and those developed specifically for our hospital environment. Other interventions included:

• individual detailing of prescribers when inappropriate use was identified by ward pharmacists
• educational presentations to clinical units such as Emergency, Intensive Care and Respiratory Medicine
• the development and promotion of a consensus guideline which reduced the role of cephalosporins in management of community- and hospital-acquired pneumonia
• publicity of the hospital’s anti-infective guidelines through the drug bulletin and on the intranet
• education sessions aimed at junior medical officers and interns
• presentations during grand rounds and Quality Week.

The results
Antibiotic usage relative to hospital activity confirmed the success in changing prescribing habits.

In 1997 the average number of nosocomial C. difficile infections was 9.8 cases per 10^5 patient days. For the period 1998 to 2000 (September) the average fell to 4.0 cases per 10^5 patient days (incidence rate ratio 0.41, 95% CI 0.21–0.80).

Whilst this reduction may be due to many causes, the more appropriate use of broad spectrum anti-infective drugs may be a contributory factor.

In the 12 month period from January 1998, when the first education intervention commenced, the decreased use of cephalosporins was reflected in a greater than $55 000 saving over the previous year. This reduction has been sustained over the three years since the first intervention by a continuing education and awareness process. A drug utilisation review cycle has been established involving twice yearly auditing of third generation cephalosporin prescribing, feedback and education. There has been a consistent improvement in the level of ‘appropriate’ prescribing of third generation cephalosporins as assessed by the infectious diseases team, with each audit.

* DDD = defined daily doses

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REFERENCES

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