Hospital Drug Usage Evaluation

by

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ABSTRACT

Drug Usage Evaluation (DUE) is quality assurance activity for drug therapy. It measures patterns of drug use by reviewing utilisation rate, cost and/or expenditure trends. It also assesses quality of use by comparing drug use and outcomes with predetermined criteria and standards which describe optimal use. DUE serves as a basis for more specific drug or procedure directed quality assurance activities and for the implementation of educational programs and/or other strategies directed at improving the quality of drug use.

The first part of my thesis describes my implementation of a Drug Usage Evaluation (DUE) program at the Royal Adelaide Hospital (RAH), in order to demonstrate the value of DUE as a tool for measuring and modifying drug use and improving the quality of use of medicines in a large teaching hospital. The program operated under the authority of the RAH Drug Committee, was cyclical and was comprised of 2 integrated components:

1. Quantitative review:
   - routine quantitative reviews of usage rate, cost and expenditure data
   - determination of user groups and review of usage patterns
2. Qualitative review:
   - descriptive reviews
   - criteria based reviews

Retrospective, concurrent and prospective reviews of drugs, drug management of particular disease states and the drug aspects of medical procedures were undertaken. Reviews ranged from simple studies to expansive reviews of drug use. Audit criteria were developed in association with relevant experts before reviews were undertaken. DUE findings were reported to the Drug Committee and subsequent recommendations published in the Pharmacy/Drug Committee bulletin or the hospital formulary.

Projects involved clinical pharmacists, pharmacy trainees, medical students and clinicians. Over 40 drugs, drug groups, procedures or diseases were evaluated including antibiotics, anti-emetics, anti-ulcer drugs, intravenous fluids, sustained release morphine, anaesthetic agents, cytotoxic drugs, laxatives, antiviral drugs and tissue plasminogen activator. Re-evaluation demonstrated improvements in utilisation for a number of drugs following implementation of corrective strategies. These included education programs, formulary restrictions, required consultations and prospective monitoring.

Through the application of criteria, the program defined an acceptable quality of use, assessed the quality of that use, coordinated strategies to correct misuse, evaluated those strategies, showed improvements in utilisation, and saved money. Total savings in excess of $900,000 are described.

The second part of the thesis relates to the feasibility of collecting quantitative drug utilisation data from Australian public hospitals. This is in an effort to provide baseline data from which to commence national DUE activities. My research arose from concern over the lack of centralised information on individual drug use from the public hospital system. The aim was to investigate the feasibility of establishing a comprehensive, central database for routine collection and reporting of indi-

vidual drug usage data from public hospitals. The research was funded by a grant from the Commonwealth Pharmaceutical Benefits Scheme Education Program.

The project was conducted in 3 phases including a survey of public hospitals. The study found that the range of Commonwealth, State and industry drug utilisation data sources provide an encouraging starting point from which to gather public hospital utilisation data in a central source.

A survey of 252 public hospitals showed that over 75% of hospitals were able to provide utilisation data, mostly in the form of a printed report. Overall, reporting accounted for approximately 60% of available beds surveyed, 35% of total Australian public hospital beds and represented approximately 60% and 45% of surveyed and total Australian hospital drug expenditure. Fewer than 20% of hospitals were able to provide electronic data files of utilisation data.

An assessment of sample electronic reports demonstrated little consistency in data descriptions, record or field structures. This lack of standardisation presents major problems for data collection and aggregation and will limit future automated collection and reporting. These difficulties could be resolved by development of a standard drug classification and coding system and, definitions for data and file formats. Several groups could assist in this process. A model is proposed for data collection commencing with submission of printed data from the teaching hospitals and moving towards a broader sample for automated data collection and aggregation, over a 5 year period.

I conclude firstly that the DUE program at the RAH was valuable for measuring and modifying drug use and, that the program was both successful in implementation and cost effective in operation. My results demonstrated that this DUE model could contribute to quality use of medicines in a teaching hospital and could be applied in other hospitals. Secondly, my research has also shown that sufficient information exists within Commonwealth and State regulatory bodies and public hospital pharmacy departments to initiate a program of representative sampling and reporting of quantitative drug utilisation data from Australian public hospitals.

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