

3rd Annual Medication Safety Symposium

Reconciling the difference

Program

14 June 2007

University Club
University of Western Australia, Crawley

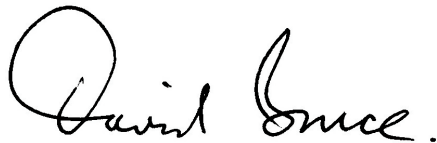
Welcome

Welcome to the third symposium run by the Western Australian Medication Safety Group. We hope that you enjoy the day and gain useful knowledge to take back to your hospital or organisation. The main purpose of the seminar is to stimulate interest in medication safety and provide you and your colleagues with ideas and practical advice about how to tackle this important topic.

This year the theme of the meeting is the importance of high-risk situations. Our focus is on transitions of care, a common source of medication error. We hope that this symposium will provide opportunities for you to share your ideas and that some of these will lead to practical improvements in patient safety.

Once again, may I wish you an enjoyable and stimulating day.

With best wishes,

A handwritten signature in black ink that reads "David Bruce." The signature is written in a cursive style with a large, prominent initial 'D'.

Prof. David Bruce
Chairman
West Australian Medication Safety Group
14 June 2007

Program

8:15	Registration / Coffee / Tea
8:45	WELCOME <i>Professor David Bruce, Chairman WAMSG</i>
9:00	MEDICATION RECONCILIATION - Setting the scene <i>Christopher Beer, Senior Lecturer & Consultant Physician School Medicine and Pharmacology UWA/Royal Perth Hospital</i>
9:30	WHAT ABOUT THOSE "OTHER" DRUGS? A discussion about managing Complementary and Alternate Medicines (CAMS) in hospital. <i>Rhonda Clifford, Senior Lecturer, Pharmacy Practice, UWA</i> <i>Alasdair Millar, Consultant Physician, Royal Perth Hospital & Chairman WATAG</i> <i>Sue Hyde, Haematology Nurse Practitioner, Sir Charles Gairdner Hospital</i>
10:30	Morning tea
11:00	ADEs following discharge from ICU <i>Gavin Leslie, Associate Professor Critical Nursing Care Royal Perth Hospital/Edith Cowan University</i>
11:30	Improving the accuracy of medication histories taken prior to and on admission to a private hospital <i>David McKnight, St John of God Hospital, Subiaco</i>
11:45	Medication reconciliation initiatives at FHHS. The story so far.. <i>Paula Caird and Shelley Wood, Fremantle Hospital and Health Service</i>
12:05	Matching Medications <i>Stephen Lim, Armadale/Kelmscott Health Service</i>
12:20	Shared visions for improved medication safety <i>Jaquie Garton-Smith, Royal Perth Hospital</i>
12:35	Monitoring reconciliation of drugs on discharge <i>James Williamson, Sir Charles Gairdner Hospital</i>
12:50	Lunch
13:40	Learning from error: identifying contributory causes of medication errors in an Australian hospital <i>David Bruce, Fremantle Hospital and Health Service</i>
13:55	Clinical Audit and Medication Prescribing, Administration and Management - Reducing the Risk to Patient Safety <i>Jan Foreman, WA Country Health Service</i>
14:10	The NIMC in practice: Prospective audit of implementation in general medical and surgical wards at RPH <i>Robyn Silla, Royal Perth Hospital</i>
14:25	Impact of the introduction of the Pharmacy Admission Assessment Sticker on medication error rates at Graylands Hospital <i>Daphine Ayonrinde, Graylands Hospital</i>
14:40	Medication review for psychiatric residents at a community hostel <i>Diana Mukasa, Graylands Selby Lemnos & Special Care Health Services</i>
14:55	Implementation of tablet PC's to enhance clinical pharmacists' effectiveness? <i>Shelley Pember, HPS Pharmacies Joondalup</i>
15:10	Afternoon Tea
15:35	A CHART FOR ALL ANTICOAGULANTS, AN ANTICOAGULATION CHART FOR ALL? <i>Margherita Veroni and Ben Carnley WAMSG Anticoagulant Working Group</i> Living with Warfarin, Information for patients - Book Launch <i>Prof David Bruce, Chairman WAMSG</i>
16:35	Close

Western Australian Medication Safety Group

David Bruce (Chairman)
Head of School, Medicine & Pharmacology
University of Western Australia

Tanya Gawthorne
Manager Office of Safety & Quality
WA Dept of Health

Marian Balm
Manager, Clinical Governance Unit
Sir Charles Gairdner Hospital

Barry Jenkins
Chief Pharmacist
Royal Perth Hospital

Christopher Beer
Senior Lecturer, Geriatric Medicine
UWA/Royal Perth Hospital

Helen Lovitt
Senior Pharmacist, Dispensing Services
Fremantle Hospital and Health Service

Lewis Bint
Deputy Chief Pharmacist
Women's and Children's AHS

Frazer Moss
Medical Superintendent, Midwest
Murchison WA Country Health Services

Rowan Davidson
Chief Psychiatrist
WA Dept of Health

Nancy Pierce
Health Consumer

David Lyon
Executive Officer
Western Australian Therapeutics Advisory Group

Margherita Veroni
Project Coordinator
Western Australian Medication Safety Group

Invited Speakers

Christopher Beer

Christopher Beer is the UWA Senior lecturer in Geriatric Medicine and is a Geriatrician and Clinical Pharmacologist at Royal Perth, Swan Districts and Mercy Hospitals. In addition to clinical work in Geriatric Medicine and the Royal Perth Stroke Service he is a member of the Western Australian Drug Evaluation Panel, WA Medication Safety Group and the RACP Specialist Advisory Committee in Geriatric Medicine.

Rhonda Clifford

Rhonda Clifford has been teaching in the newly established postgraduate Master of Pharmacy course at UWA since 2005. Prior to that, she completed her PhD in pharmacy practice in 2004 through the University Department of Medicine at Fremantle Hospital and Curtin University. The PhD project was done in the Diabetes Research Unit at Fremantle Hospital - looking at the role of medication review in diabetes patients. The PhD was completed under the supervision of Professor Timothy Davis and Dr Kevin Batty.

She spent 15 years as a practicing clinical pharmacist in a variety of settings. Areas of interest include domiciliary pharmacy services, complementary medicines, diabetes, pharmacy practice research, asthma and obesity.

Alasdair Millar

Alasdair Millar is consultant physician and clinical pharmacologist at Royal Perth Hospital and Chairman of the Western Australian Therapeutics Advisory Group.

Susan Hyde

Sue Hyde is a Haematology Nurse Practitioner at SCGH. The role is an advanced nursing role and is supported by legislation that allows nurse practitioners to prescribe medications following clinical protocol guidelines in their designated area of practice. Sue is a member of Western Australian Therapeutics Advisory Group.

Gavin D Leslie

Gavin Leslie is Associate Professor Critical Care Nursing with a joint appointment at Edith Cowan University and Royal Perth Hospital.

Dr Leslie has worked in critical care for over 27 years in Sydney and Perth. He completed his undergraduate degree, Post Grad Dip and PhD at Curtin University. He is a past national president of Australian College of Critical Care Nurses and is current Editor of Australian Critical Care. Dr Leslie is on the editorial board of the American Journal Infection Control and Collegian, and reviews for Anaesthesia and Intensive Care and Intensive Care Medicine. His research interests include renal therapies and fluid management in critical illness and nursing practice in intensive care.

Dr Leslie takes up a new appointment as of July 2007 at Curtin University in School of Nursing and Midwifery as Associate Professor in Critical Care Nursing

Ben Carnley

Ben Carnley is a Consultant Clinical and Laboratory Haematologist at Royal Perth Hospital. He has an interest in thrombosis and haemostasis. Ben is also Chairman of the WAMSG Anticoagulant Working Group.

11:45 **Medication reconciliation initiatives at FHHS. The story so far..**
Caird P , Fitzsimons K, and Wood S, *Pharmacy Department, Fremantle Hospital and Health Service*

Over the past two years, Fremantle Hospital pharmacy department has been striving to achieve optimal medication safety through several projects relating to medication reconciliation including our Discharge Liaison Pharmacist project which lead to the development of the Clinical Pharmacy Technician in the Emergency Department project and SQuIRe Medication Reconciliation project.

A Clinical Pharmacy Technician in the Emergency Department (ED) Project was commenced in 2004 which involved the pharmacy technician sourcing the patient's medication history from GPs, community pharmacies (CP), care facilities and the patient for reconciliation by the clinical pharmacist. This project is currently in its second phase of development. A medication reconciliation form is compiled for each patient and discrepancies reconciled by the team pharmacist to ensure that medication histories are complete and accurate at the time of admission. Extensive medication histories have been shown to reduce medication-related problems but are not standard practice due to clinical pharmacist time constraints and work load. The employment of a clinical technician to collect this information is a less expensive alternative to pharmacists gathering this information, frees up nursing and medical staff to concentrate on other duties and allows one person to be allocated this task in the ED. The reconciliation of these histories is then performed by the team clinical pharmacist. Patients admitted to the FHHS ED on more than 5 regular medications or medical devices were identified for inclusion in this study.

449 patients were reviewed, of these 98 were eligible for inclusion in the study. 78 extensive medication histories were passed on to the ED pharmacist. 202 discrepancies (2.6 per patient) were identified with medication histories documented in the patient's medical record on admission to hospital. The majority of these included omissions and no dose or no frequency recorded. 209 interventions resulted, these included: confirmation of doses and frequencies and the addition of medications that had been omitted in error. The trial of this medication safety initiative was received very favourably by all health professionals and a business case proposal is presently being compiled.

The *SQuIRe Clinical Practice Improvement* program has provided an opportunity to further assess processes of medication reconciliation and develop solutions to areas of concern. Medication reconciliation at discharge provides the greatest challenges at FHHS to date. Discrepancies observed between the electronic discharge summary (EDS) and the discharge medications dispensed to the patient has been highlighted as an area of primary concern. Feedback from GPs indicated that the discharge medication section of the electronic discharge summary (EDS) is often inaccurate or does not contain all of the necessary information. Our project aims to evaluate the outcomes of extending clinical pharmacy services involving inputting accurate and comprehensive information into the medication section of the electronic discharge summary to facilitate timely transfer of patient information to the GP. We will also evaluate if the provision of a current discharge medication list (and MedProf© to patients being discharged home) to all patients is beneficial.

14:10 **The NIMC in practice: Prospective audit of implementation in general medical and surgical wards at RPH.**

R C Silla, J A Millar, B Chandler and G E Lee, *Drug Usage and Assessment Group, Royal Perth Hospital*

The NIMC was introduced to public hospitals in WA on 30 June 2006 (26/6/06 at RPH) by an Operational Circular from the Director-General of Health (OP2080/06), as “*a quality improvement strategy aimed at addressing safety and quality issues associated with medication management.*” DUAG conducted an audit of the performance of the NIMC compared to the previous RPH drug chart (MR246) after 4 months of use by examining compliance with chart provisions by prescribers and other users, using both the indicator tools specified by Office of Safety and Quality and 14 additional indicator fields defined by DUAG.

Data was collected from 105 inpatients (156 charts) before (June 2006) and 120 inpatients (177 charts) 4 months after (October 2006) implementation of the NIMC in 11 general medical and surgical wards. These charts included 2085 and 2030 individual prescriptions including “PRN” scripts, respectively. Data were coded into an MS Excel spreadsheet for analysis. Changes in “demographic” and new fields were not analysed. Indicator fields ($n=26$) with >15% difference in compliance adjusted for changes in the denominator relevant to each indicator were defined as showing a “major” difference. Differences of 11-15% and 6-10% were defined as “moderate” and “minor” respectively. Changes of 5% or less were ignored. Changes in the process outcomes were further classified subjectively as likely to ‘increase’ or ‘decrease’ medication safety.

Four, 3 and 6 indicator fields showed major, moderate or minor changes respectively. All “major” changes were likely to **increase** medication safety. The following results were especially noted:

1. Increases in the usage of “PRN” fields (+76 prescriptions) were associated with a reciprocal change in “Variable Dose” fields (-68). These related changes reveal a chart design flaw and **decrease** medication safety;
2. Recording of patient weight improved by 150% (from 3.9% to 9.6% of all charts) but remains at under 10% (**increase** safety);
3. Use “od” (for once daily) increased by 61% (**decrease** safety) but there was an improvement in the entry of administration times (37%) and indication (122%, 238% for PRN orders) by prescribers (**increase** safety);
4. Entry of a maximum dose for PRN orders increased by 198% (**increase** safety);
5. The number of orders signed by the prescriber rose from 73% to 97% (**increase** safety).
6. In spite of the reduction in the available number of fields and cramped design of the NIMC, the expected increase in the average number of current charts per patient was not seen and the general legibility of charts was steady (**no effect** on safety).

These data suggest that the changes in prescribing likely to enhance medication safety outnumbered those with the opposite effect. However individual changes vary in clinical significance. For example, the relative absence of space for variable dosage is a significant problem because these prescriptions have moved to an area of the chart that is not designed for variable dosing and which is being grossly misused. Some changes (e.g. use of ‘od’) may be unrelated to the chart design. Interpretation of these data is affected by lack of information on the background variation in chart usage with each cohort of prescribers, and it is possible that the positive and negative changes observed here will settle or worsen with time. However, modifications to the NIMC are required to realise its full potential.

14:25 **Impact of the introduction of a Pharmacy Admission Assessment Sticker (PAAS) on medication error rates at Graylands Hospital**

Daphine SR Ayonrinde, A/Chief Pharmacist, Graylands Hospital/Area Mental Health Pharmacist, NMAHS

Background: A large proportion of hospital drug errors appear to occur at the time of admission. Typically, the admitting doctor is unable to ascertain all the medication history required for a comprehensive medication review. Potential reasons for this include inadequate knowledge of treatments by the patient, acute illness and outdated medication lists. In light of the Australian Pharmaceutical Advisory Council (APAC) guidelines and the Pharmaceutical Review Policy (PRP), the pharmacists at Graylands Hospital (GH) introduced a Pharmacy Admission Assessment Sticker (PAAS) to their daily practice. Every patient admitted to GH was to have a “pharmacy admission” within 24hours of admission or next working day. The latter timeframe takes into consideration the fact that the pharmacy department is closed on weekends and public holidays.

Design: A prospective observational study was undertaken on patients admitted at GH and carried out in three stages. Firstly, an audit was conducted to check how many patients had an admission completed by a pharmacist within the first 24hours or next working day of their admission. Secondly, the new pharmacy admission stickers were then introduced. Medical records on every patient admitted to GH within those initial 3 weeks were then reviewed to determine the presence of the PAAS in the progress notes. Finally, a survey of medical and nursing staff was also conducted regarding their perception of this intervention.

Setting: The study was performed at GH, a 205-bed major metropolitan psychiatric teaching hospital with approximately 1500 admissions per annum.

Method: A pharmacy intern reviewed progress notes of all patients admitted to the designated wards to determine if the clinical pharmacist had performed a pharmacy admission. The PAAS were introduced to the whole hospital and for the first 3 weeks, each patient record was checked to see if an assessment sticker had been placed in their progress notes. Furthermore, a survey was conducted targeting medical and nursing staff to assess their reception of this pharmacy initiative.

Results: On the pre-audit day, 48 patients had their notes checked for evidence of a pharmacy admission record. Of these 39 (81%) had been reviewed at admission by the clinical pharmacist. On the post-audit day, 45 patients had their notes checked to see evidence of the PAAS. Of these, 28 (62%) had been reviewed at admission by the clinical pharmacist. The introduction of the PAAS led to a *decrease* in the number of documented pharmacy admissions from 81% to 62%. This anomalous result though statistically significant ($p < 0.002$), is likely due to various confounders. The pharmacy survey showed overwhelmingly that the majority of doctors and nurses found the sticker useful for quickly verifying patient medication related history. A total of 29 doctors and nurses responded to the survey. Of these, 97% stated that they read pharmacists’ admission notes and 86% claimed they had noticed the PAAS.

Conclusions: The introduction of the PAAS appears to have been well received by medical and nursing staff. Even though the results appear negative, it is early days since the PAAS was introduced. It is worth noting that the completeness of the entries significantly improved. The percentage of documented medication checks at admission went up from 44% to 82% in the post PAAS audit. In fact, only two patients out of 45 did not have a pharmacy admission and both patients had not received the PAAS. This should translate to a reduction in medication error rates and therefore improvement in patient safety. While the sticker is only being used in its early days and already showing improvement in compliance, it would be worthwhile to conduct an ongoing audit to ensure that this pharmaceutical review policy is maintained at the highest standard.

14:40 **Medication review for psychiatric residents at a community hostel**

Diana Mukasa, *Acting Deputy Chief Pharmacist, Graylands Selby Lemnos & Special Care Health Services*

Background: There has been concern for some considerable time about the quality of the prescribing, administration and monitoring of medication for residents in community psychiatric hostels. The Chief Psychiatrist identified these concerns and risks in a recent report (June 2005).

The aim of this project was to assess the value of pharmacist-conducted medication reviews for psychiatric residents of a community hostel.

Design: This was a medication review that was carried out retrospectively. It was set up as a 6-month 'one-off' project.

Setting: The review was carried out at a community hostel with 70 beds, approximately 90% of who were psychiatric residents.

Method: The review commenced on 21/03/2006 and was completed on 26/04/2006. Each resident's medication chart was reviewed. Also reviewed were the residents' notes from which any relevant blood results or comments were retrieved, following on to which recommendations were made as per current antipsychotic and mood stabiliser guidelines. When possible, the patients' Webster paks® were compared to their medication charts. Drug allergy or side effects stickers were attached to residents' medication charts as necessary. Generic names were substituted on the charts and abbreviations completed. When it was felt necessary, a review of medications was suggested. Possible interactions and side effects were also noted. These recommendations were then sent out to the medical officer and GP in writing.

Results: There were a total number of 63 residents reviewed. Drug alerts were noted in 9 cases (14.2%) Chart clarifications were made for the majority of the reviewed residents.

GP recommendations: Out of the 63 residents, sixty had recommendations made to the GP. The majority of these recommendations were to determine if various aspects of monitoring had been carried out.

There were a total number of 85 interventions made for the 63 residents.

Psychiatry medical officer recommendations: Twenty-six out of the 63 residents had recommendations made and there were 48 interventions in total. Most of these involved a request to review residents' medication profiles.

Conclusion: It is clear from the number and type of interventions that there is a role for pharmacist medication reviews on hostel residents. The majority of the interventions involved ensuring that monitoring was in line with current guidelines and reviewing of medication profiles. Both prescribers found these reviews to be useful and the GP has included all the reviews in the residents' case notes. Pharmacist medication reviews conducted at least every 12 months would be of great value to hostel residents.

14:55 **Implementation of tablet PC's to enhance clinical pharmacists' effectiveness?**
Sean Grieve - Pharmacist, Shelley Pember - Senior Clinical Pharmacist , Chris Shenton
- Partner , *Joondalup Hospital Pharmacy*

Implementation of tablet PC's to enhance clinical pharmacists effectiveness

JHP investigated the use of portable computers with an immediate goal of improving clinical pharmacists' productivity, access to clinical information and improvement of patient outcomes.

PDA devices and tablet PCs were compared. Tablet PC devices were selected for the following reasons:

- PCs hold greater information databases - eg Micromedex and full MIMs
- Faster & Easier to program PC's using our preferred application - Microsoft Access[®]
- Easier to display more information on a larger screen

Since in the short to medium term we would be unable to network wirelessly in the hospital, we implemented a stand alone -synchronise system. We were unable to use commercial solutions that required wireless web access for operation.

At implementation we have achieved the following:

- Integration with the hospital patient management system.
- Tracking of patient's information from previous admissions and throughout movements from ward to ward.
- Ability to direct pharmacists ward rounds, indicating who has been reviewed & not.
- Collection of intervention data & population of this data to dispensing system. Also email of alerts of critical intervention to clinical risk manager.
- Ability to collect drug profile during stay and enhance the discharge profile process

The goals of the system are:

- To give handover between pharmacists when patients move or are readmitted.
- To develop a system of medication reconciliation and specifically to fit within new Australian electronic discharge summary standards. (www.nehta.gov.au)
- Integrate further with the patient medication record.

Match interventions to drug, DRG, prescriber and unit so that data can be analysed for trends.

Session 4

Chairman: David Bruce

- 15:35 **A CHART FOR ALL ANTICOAGULANTS, AN ANTICOAGULATION CHART FOR ALL?**
Margherita Veroni and Ben Carnley WAMSG Anticoagulant Working Group
Living with Warfarin, Information for patients - Book Launch
Prof David Bruce, Chairman WAMSG