4th Annual Medication Safety Symposium

High-risk, high-returns: Investing in medication safety

Program

26 June 2008

University Club
University of Western Australia, Crawley
Welcome

Welcome to the fourth symposium run by the Western Australian Medication Safety Group, and my first as Chairman. We hope that you enjoy the day and gain useful knowledge to take back to your hospital or organisation. The main purpose of the day 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 identifying high-risk drugs, high-risk situations and high-risk patient groups and strategies to mitigate the risk. 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,

Clinical Professor Alasdair Millar
Chairman
West Australian Medication Safety Group
26 June 2008
Program

8:00  Registration / Coffee / Tea

8:30  WELCOME

Clinical Professor Alasdair Millar, Chairman WAMSG

8:45  HIGH RISK, HIGH RETURNS: INVESTING IN MEDICATION SAFETY
- SETTING THE SCENE

Penny Thornton, Pharmacy Services Manager, Children’s Hospital Westmead.

9:30  CURRENT SAFETY MANAGEMENT IN HEALTHCARE SYSTEMS:
- KEY NATIONAL AND INTERNATIONAL TRENDS

Dr Dorothy Jones, Director, Office of Safety and Quality in Health Care

10:00 WHAT CAN YOU DO TO GET A BETTER RISK PROFILE?

David McKnight, Deputy Chief Pharmacist, St John of God Hospital, Subiaco

10:30  Morning tea

10:50  CLEANING UP NARCOTIC USE WITH SOAP

Dr Stephen Lim, Chief Pharmacist, Armadale Health Service

11:10  IV HEPARIN - GETTING THE BALANCE RIGHT

Karen Flounders, Thrombosis Nurse Consultant, Royal Perth Hospital

11:30  INTEGRATED MEDICATION MANAGEMENT TO PREVENT ERRORS

Barry Jenkins, Chief Pharmacist, Royal Perth Hospital

11:50  ENOXAPARIN USE IN THE TREATMENT OF VENOUS THROMBOEMBOLISM AND
- ACUTE CORONARY SYNDROMES AT WA TERTIARY HOSPITALS

Yueng Yueng Chai, School of Pharmacy, UWA

12:05  PARACETAMOL USE IN OVERWEIGHT AND OBESE CHILDREN

Helen Knappe, School of Pharmacy, UWA

12:20  IMPLEMENTING CLINICAL AUDIT TEACHING IN A MEDICAL SCHOOL:
- AN OPPORTUNITY TO IMPROVE MEDICATION SAFETY

Dr Sally Murray, School of Medicine, University of Notre Dame, Fremantle

12:35  Lunch

13:15  COMPLIANCE WITH MEDICATION CHECKING & ADMINISTRATION POLICY

Jeanette Robertson and Pania Falconer, Princess Margaret Hospital for Children

13:30  NIMC CHART TURNOVER COMPARED WITH THREE DISPLACED PERTH HOSPITAL
- CHARTS

Robyn C Silla, Drug Usage And Assessment Group, Royal Perth Hospital

13:45  ADVERSE DRUG REACTION ANNOTATION ON MEDICATION CHARTS.
- DISAPPOINTING RESULTS FROM A PAEDIATRIC DISCHARGE SURVEY

Chantelle M van Bronswijk, Department of Pharmacy, Princess Margaret Hospital

14:00  CONCURRENT SESSION: WORKSHOPS 1, 2 AND 3

14:45  CONCURRENT SESSION: WORKSHOPS 1, 2 AND 3

15:30  Afternoon Tea

16:00  WORKSHOP WRAP-UP

FUTURE PLANS

16:45  Close
## Western Australian Medication Safety Group

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<tr>
<td>Christopher Beer</td>
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<td>Geriatric Medicine, UWA/Royal Perth Hospital</td>
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<td>Katherine Birkett</td>
<td>Clinical Nurse Manager</td>
<td>Royal Perth Hospital</td>
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<td>Beress Brooks</td>
<td>Director, Safety, Quality and Performance</td>
<td>North Metro Area Health Service</td>
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<td>Rowan Davidson</td>
<td>Chief Psychiatrist</td>
<td>WA Dept of Health</td>
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<td>Tanya Gawthorne</td>
<td>Manager Office of Safety &amp; Quality</td>
<td>WA Dept of Health</td>
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<td>Rhonda Clifford</td>
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<td>UWA School of Pharmacy Practice</td>
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<td>Catherine Hynch</td>
<td>Risk Manager</td>
<td>Princess Margaret Hospital</td>
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<td>Helen Lovitt</td>
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<td>Fremantle Hospital and Health Service</td>
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<td>David McKnight</td>
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<td>Mark Newman</td>
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<td>Safety and Quality Unit, SCGH</td>
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<td>Nancy Pierce</td>
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**David Lyon**  
Executive Officer  
Western Australian Therapeutics Advisory Group

**Margherita Veroni**  
Project Coordinator  
Western Australian Medication Safety Group
Invited Speakers

Penny Thornton
Penny is currently Pharmacy Services Manager at The Children’s Hospital Westmead, NSW. She has previously been Vice-president and Federal Councillor, the Society of Hospital Pharmacists of Australia (SHPA) and member of their Committee of Specialty Practice in Medication Safety.

Penny is representative of the Directors of Hospital Pharmacy on the NSW Statewide Medication Safety Committee. She is Australian representative for the Institute for Safe Medication Practices, USA and in this role, editor of the Medication Safety Series in the Journal of Pharmacy Practice & Research.

Penny was the Australian representative at the inaugural meeting of the International Network of Safe Medication Practice Centres, 2006, producing the Salamanca Declaration.

Penny is a member of the National Medication Scoping Study Steering Committee of the Australian Commission on Safety & Quality in Health Care. She was previously a member of the Medication Safety Taskforce of the Australian Council of Safety & Quality in Healthcare 2002-4.

Dorothy Jones
Dorothy is Principal Medical Officer & Director of the Office of Safety & Quality in Healthcare at the Department of Health as well as Adjunct Professor Health Sciences (Curtin).

Dorothy originally trained in medicine and over the last ten years has made the transition into strategic health policy, planning and executive management within the Western Australian state government health department.

She works as a senior clinical executive within the Department and has specific carriage, as foundation Director (2001), of the statewide patient safety, quality and clinical governance reform program. Dorothy recently undertook a mid-career sabbatical to the US and spent some time at the Harvard Kennedy School studying governance and executive leadership and visiting key international centres in patient safety and health care improvement.

Dorothy is especially interested in how best to apply improvement science and leadership behaviours and skills to influence modern healthcare systems, which healthcare improvement activities (and associated reforms) makes a real difference to consumers and patients who need it, and how to accelerate health improvement and patient outcomes in Western Australia.

David McKnight
David is Deputy Director of Pharmacy at St John of God, Subiaco. He was a member of the WAMSG Anticoagulant Working Group and the WAMSG Medication History working group. He is currently a member of the WAMSG.

Stephen Lim
Stephen is Chief Pharmacist, Armadale Health Service. He was a member of the WAMSG Anticoagulant Working Group.

Karen Flounders
Karen is Thrombosis Nurse Consultant at Royal Perth Hospital. She was a member of the WAMSG anticoagulant working group.

Barry Jenkins
Barry is Chief Pharmacist, Armadale Health Service. He is a past member of the WAMSG.
The hospital is a dangerous place for patients.

Australian national position on medication safety - re data, is presented.

The dilemma we have in trying to measure medication safety.

We are in a difficult position in only being able to capture reported errors, knowing the large number which both cause little harm and go unreported. One suggestion is to identify and eliminate as many risks as possible.

Should we follow ISMP in identifying High Risk Drug Groups or even developing a list of High Risk Drugs?

Introduction to current perceived high risk threats

Low risk drug or situations - should we be concerned? What can we do to make sure a low risk event doesn’t develop into a major incident.

What is our evidence base for strategies which produce high returns on investment in the patient safety area?

Clinical pharmacy systems, Drug Distribution systems, Continuity and consistency in dispensing practice between health sectors, Automation, Responsible prescribing, Quality assurance, Error trapping, Targeted alerts, Simplification and continuity of systems.

Achieving system change in medication safety - changes in culture - nursing, prescribing and pharmacy practices. What is harder to change - items needing a national if not global lobby.

The value of learning from near miss incidents.
9:30  CURRENT SAFETY MANAGEMENT IN HEALTHCARE SYSTEMS:
KEY NATIONAL AND INTERNATIONAL TRENDS
Dorothy Jones, Director, Office of Safety and Quality in Health Care

10:00  WHAT CAN YOU DO TO GET A BETTER RISK PROFILE?
David McKnight, Deputy Chief Pharmacist, St John of God Hospital, Subiaco

10:30 - 10:50  MORNING TEA
Session 2

Chairman: Helen Lovitt

10:50  CLEANING UP NARCOTIC USE WITH SOAP (SAFE OXYCODONE ADMINISTRATION PROMOTION).

Stephen Lim, Chief Pharmacist; D Bridgeford, Manager of Performance Review; Armadale Health Service

Aims:
1. To determine the causes of adverse events due to oxycodone administrations.
2. To implement strategies to improve oxycodone prescription and to reduce administration errors and associated patient harm by 100%

Method:
1. A thorough analysis of AIMS (Australian Incident Monitoring System) reports from 2003 to 2006 on errors/adverse reactions as a result of oxycodone administration in Armadale Health Service to determine contributing factors.
2. A baseline survey of all nurses identifying their oxycodone knowledge and likely cause of oxycodone error.
3. The formulation of a marketing plan to raise staff awareness to safety practices in order to prevent future errors.
4. The mandatory requirement for prescribers to use generic names and the type of release required on all prescriptions, supported by the introduction of a “no tolerance” approach by nurses for incorrect prescriptions.
5. To conduct ongoing audits and staff surveys to evaluate the effectiveness of this safety project and sustainability strategies.

Results:
1. Nurses were confused over the different types of oxycodone preparations available resulting in the inappropriate inter-changeability between the immediate and slow release preparations leading to potential adverse effects.
2. The used of trade names contributed to the confusion between Oxynorm, Oxycontin, Endone, MSContin preparations, resulting in a potential serious administration error.
3. The introduction of two extra labels “SLOW RELEASE PREPARATION, NOT FOR PRN USE” and “HAVE YOU DOUBLE CHECKED SR/IR?” have resulted in no administration errors.
4. The introduction of recording in generic name, release form, strength and brand name in bracket in the ward S8 Register further reduced administration error.

Conclusion: The establishment of the SOAP safety project team resulted in the development of sustainable strategies to reduce patient harm and confusion relating to oxycodone preparations and resulted in the safe administration of oxycodone and other medications with multiple preparations.
Background
Intravenous heparin is a difficult drug to administer, necessitating the use of an intravenous pump, frequent laboratory testing, and frequent dose adjustments. It is a complicated process that entails a series of steps involving multiple clinicians. IV Heparin is associated with a high rate of drug-related problems due to its complex pharmacological profile, and high potential for medication errors. One review of patients receiving IV Heparin, (Cynthia, 2004), found that approximately 70 steps were required to reach completion of the first dosage adjustment and most of the steps, provided no prompt for the next step.

During a recent audit of a newly introduced anticoagulation chart at Royal Perth Hospital it was found that despite IV UFH being highlighted as 7th in medicines most frequently involved in incidents reported through AIMS in WA there were no processes in place to reduce these errors.

A total of 274 anticoagulant charts were audited at RPH. Of the 274 charts 35 charts contained orders for the administration of IV Heparin. Results are as follows.
- Nine aPPT samples took longer than 3 hours to get to the labs.
- Seven aPPT samples took longer than 5 hours to be actioned.
- 6 aPPT samples were taken 3 hours too early.
- Lack of confidence in converting heparin units to mls (60% nurses not confident with mathematical conversions)
- Heparin infusions disconnected for showers xrays, etc
- Variation in who accessed aPTT results
- Variation in whom was responsible for new heparin rate and bolus doses
- Variation in how many nurses checked the infusion rate change.
- Telephone Orders/Transcribing Errors

Lessons for Best Practice - KISS is Best (Keep It Simple Stupid)
- Education for all staff involved in prescribing and administration of IV Heparin
- Clearly define WHO is responsible for what action all of the time ie Dr accesses results, Nurse rings Dr ect
- Two nurses to check heparin infusion rate changes
- Timely aPPT results (1-2 hours)
- Simple heparin nomograms (less nomograms the better)
- Readily convertible heparin bolus doses
- Provide units to mls conversion charts
- Consider whether you should use IV heparin in all areas of practice?
- Consider LMWH as an alternative or
- Switch to LMWH as soon as possible

There has been a recent development of a Nursing Practice Standard (NPS) at Royal Perth Hospital. The Director of Nursing (DON) and other Heads of Department have endorsed the NPS. The NPS clearly defines who is responsible for what actions and when in the prescribing and administration of IV Heparin. The NPS is currently with the Nursing Practice Committee.

The aim of the NPS is to give nursing staff some clear guidelines in the administration of IV Heparin. Hopefully, with clearer processes in place and best practice guidelines as a guide, the administration of IV Heparin will be safer to manage.
Objective: To review the use of enoxaparin in the treatment of venous thromboembolism (VTE) and acute coronary syndromes (ACS) in light of existing guidelines, as defined by the manufacturer(1), and implementation of an anticoagulation chart.

Methods: Retrospective audit of consecutive medical records of patients treated at two WA tertiary hospitals for a diagnosis of either ACS or VTE. Consecutive medical records from two different time periods were audited; prior to implementation of the anticoagulation chart (October 2003) and after implementation of the anticoagulation chart (October 2007).

Results: This retrospective audit highlighted multiple areas of interest involved in the prescribing of enoxaparin. These include the recording of parameters (such as patient weight, height, and renal function) required for the appropriate dosing of enoxaparin, documentation of the appropriate monitoring recommended with the use of enoxaparin, and the appropriateness of prescribed dose based on indications, patient’s weight, renal function, and bleeding risk.

Conclusions: Changes in the documentation of parameters required for the appropriate dosing of enoxaparin between the two time periods were observed. Based on the results observed for the latter time period in 2007, documentation relating to the use of enoxaparin within the two WA tertiary hospitals can be further improved.
PARACETAMOL USE IN OVERWEIGHT AND OBESE CHILDREN

Helen Knappe1, McCauley2, M, Roberts1, R, Clifford1; 1School of Pharmacy UWA, 2Princess Margaret Hospital

Background: Paracetamol dosing guidelines, suggest a 15mg/kg dose for the average weight child, but do not give any dosage recommendations for the overweight or obese child. Recently published recommendations have suggested dosage adjustments in the obese child based on an ideal body weight (IBW) calculation, in order to reduce the risk of potential adverse events or toxicities. 1

Objectives: To investigate current prescribing patterns of paracetamol in overweight and obese children.

Method: A preliminary retrospective audit was undertaken for 25 children (aged 2-18 years). The weight, height, paracetamol dose and frequency were recorded and the data subsequently analysed. More patients are being audited before the completion of the project.

Results: Of the 25 children that were audited, 3 children were overweight, 3 were obese and 17 were of a normal weight range. Children that were underweight were excluded from the study. It was found that only 16.7 % (n= 6) of those that were obese or overweight, had an adjusted dose of paracetamol. It was also found, that 16.67 % of those that were obese or overweight, did not receive a paracetamol dosing adjustment and were prescribed doses according to current guidelines.

Conclusion: In the majority of cases, it was found that paracetamol prescribed to overweight and obese children was adjusted either by IBW or clinical judgement to below current standard dosing guidelines of 15mg/kg per dose.

IMPLEMENTING CLINICAL AUDIT TEACHING IN A MEDICAL SCHOOL: AN OPPORTUNITY TO IMPROVE MEDICATION SAFETY

DB Mak and Sally B Murray School of Medicine, University of Notre Dame, Fremantle

Background
Clinical audits are increasingly used as a tool for monitoring practice and improving health outcomes. Professional colleges are also increasingly requiring doctors to perform quality improvement activities, such as clinical audit, as part of their ongoing registration. There are few examples of hands-on clinical audit teaching in undergraduate medicine.

Objective
To describe Notre Dame medical school’s clinical audit curriculum.

Method
Information was collected through course documents and interviews with key staff members.

Results
From 2008 onwards, all final year students are required to undertake a clinical audit involving 20-30 patients in either a hospital or private practice setting. The audit comprises 10% of their marks for final year assessment. Learning is supported with a handbook, lectures and individual meetings with the clinicians whose patients they audit. The handbook contains audit topics identified by hospital Clinical Quality and Safety Committees as priorities for investigation. Students are required to submit an audit proposal for formative assessment by the University before implementation; this provides opportunity for individual feedback and suggestions for improvement. Audits must be approved by the relevant Clinical Quality and Safety Committee before data collection can begin. Topics chosen by students this year include medical practitioners’ adherence to thromboembolism prevention guidelines, adherence to antibiotic guidelines for treatment of community acquired pneumonia and use of pre-operative prophylactic antibiotics.

Conclusions
Encouraging medical students to undertake clinical audits in partnership with pharmacists and clinical pharmacologists has the potential to improve prescribing practices.

12:35 – 13:15
LUNCH
Session 3
Chairman: David McKnight

13:15 COMPLIANCE WITH MEDICATION CHECKING & ADMINISTRATION POLICY
Jeanette Robertson and the Surgical Services Clinical Care Unit Research Team, (Jillian Abe, Victoria Corkish, Pania Falconer, Fenella Gill, Janet Samson, Brenda Simmons, Dianne Stewart), Princess Margaret Hospital

BACKGROUND
In 2005/2006 the Surgical Services Clinical Care Unit (SSCCU) reported 174 medication incidents - with two of the major contributing factors being failure to follow policy (75%) and failure to read or misread the medication chart (50%). Backed by the findings of the PMH nursing research priorities Delphi survey, a study was mounted to explore the issue of compliance with the PMH protocol for the checking and administration of drugs.

OBJECTIVES
To determine elements of the current drug policy where compliance is less than required and to obtain information about the factors which influence compliance with drug checking and administration policy.

METHODOLOGY
A purpose designed questionnaire which explored issues around compliance with the PMH drug checking and administration policy was developed and validated for content by the SSCCU project team. The questionnaire - together with a letter inviting participation was sent to all 131 registered nurses working within the SSCCU.

DATA ANALYSIS
Descriptive statistics were used to analyse the data. Where numbers allowed it, chi square testing was used to determine any links between variable such as seniority and ward area. Content analysis was used to process the open ended questions and identify recurrent themes.

RESULTS
Significant differences were found between the level of experience and checking drugs at the right time. Differences between ward areas were also found in the reported compliance with checking the child’s identification band.

CONCLUSION
The data has identified two factors which influence compliance with the checking and administration of drugs. These issues will be further explored in focus groups and strategies developed to minimise the factors identified which hinder compliance with existing policy.
NIMC CHART TURNOVER COMPARED WITH THREE DISPLACED PERTH HOSPITAL CHARTS

Robyn C Silla, Alasdair Millar, Glenda E Lee, Ann Berwick Drug Usage And Assessment Group, Royal Perth Hospital

Introduction: We have reported¹ that the NIMC requires rewriting more frequently than the previous Royal Perth Hospital (RPH) chart. We report results of a comparative study to fully document this requirement.

Methods: We obtained NIMCs for 6 RPH inpatients who required 2 or more charts (range 2-11). We transcribed the prescriptions onto the previous RPH, SCGH and FH charts and compared chart numbers and drug recharting requirements.

Results: RPH and SCGH charts contained undifferentiated fields and gave identical results. The FH chart has differentiated fields (IV and oral). On average, 59% more NIMC were required than RPH/SCGH charts (p = 0.01, 1-sided paired t test) but the number of NIMC and FH charts was similar. Recharting of 8.1 more drugs was required for each additional NIMC needed in excess of RPH/SCGH charts (regular, 4.4; PRN, 3.9) but the NIMC and FH charts required similar extent of recharting (-1.1).

Conclusions: Our previous finding was confirmed for both RPH and SCGH but not FH charts. The NIMC relative to RPH/SCGH charts was affected by the lower day capacity and the effect of differentiation of prescribing fields (regular and PRN). The FH chart performance was similar to the NIMC for the same general reason. Differentiation of prescribing fields of a drug chart degrades the chart performance measured by the need for additional charts and drug recharting.

ADVERSE DRUG REACTION ANNOTATION ON MEDICATION CHARTS.
DISAPPOINTING RESULTS FROM A PAEDIATRIC DISCHARGE SURVEY

Chantelle M van Bronswijk, Department of Pharmacy, Princess Margaret Hospital

Objectives
To ascertain some of the factors causing delays in seamless discharge prescription dispensing to children at PMH. To report on these factors and identify strategies to improve the process.

Methods
Charts arriving in the PMH dispensary for dispensing of discharge medications were randomly selected over a one week (5 working day) period. Charts from medical and surgical wards were included in the survey. A data sheet was completed for each chart selected. Basic information considered essential to the dispensing process was assessed and included; Allergy Status, Patient Weight, Ward, UMR stickers. If any doctor or nurse contact was required in order to complete the discharge prescription, this was also recorded.

Results
103 charts were selected over a 5 day period
40 charts had no problems/omissions identified, and were dispensed without delay
63 charts had problems/omissions, or involved contact with ward staff prior to completion.

These included;
• 3 charts with no ward annotated on the chart
• 9 charts with no patient weight annotated on the chart
• 36 charts with no allergy status annotated (i.e. area left blank)
• 29 charts that involved nurse and/or doctor contact prior to completion

Conclusions
Multiple factors can cause delays when dispensing discharge medications. The omission of an allergy status in 35% of charts audited was a concern with obvious safety implications throughout the patient’s hospital stay, and at the point of discharge. An education campaign is necessary for all medical, nursing and pharmacy staff to highlight the importance of documenting allergy and adverse drug reaction information so that it is available at the time of prescribing, dispensing and administration. A repeat audit should be conducted at a later date to quantify any improvement in allergy documentation.
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**WORKSHOP 1: LOOK-A-LIKE/SOUND-A-LIKE DRUGS - DOES YOUR HOSPITAL HAVE A STRATEGY?**

*Facilitator: Penny Thornton, Pharmacy Services Manager, Children’s Hospital Westmead*

**WORKSHOP 2: IMPROVING SAFETY OF INTRAVENOUS DRUG ADMINISTRATION - PEOPLE VS TECHNOLOGY?**

*Facilitator: Helen Lovitt, Deputy Chairman, WAMSG*

**WORKSHOP 3: MEDICATION SAFETY IN THE PAEDIATRIC SETTING - HOW IS IT DIFFERENT?**

*Facilitator: Violet Ford, A/Pharmacist in Charge of Clinical Services, Princess Margaret Hospital*

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**Session 4**

Chairman: Margherita Veroni

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