



The Centre for Medication Use and Safety (CMUS) has established itself as one of the key research units within the Faculty of Pharmacy and Pharmaceutical Sciences of Monash University. CMUS has two nodes: the one based within the Pharmacy Department of The Alfred focuses on acute health and medication use. The research activities of The Alfred node of CMUS fall under the broad banner of evaluating the quality use of medicines, and may be classified under the themes of medication safety, therapeutics, practice research and outcomes research.

Key Research Projects

- The ARC-funded COMPLIANS (COst-effectiveness analyses of improved adherence to Management PLans among AUstralianS) project is a collaboration between Pharmacy, Monash University Department of Epidemiology and Preventive Medicine, The Alfred Respiratory Unit and Roche Pharmaceuticals. The final data analysis is being completed and will enable us to investigate the economic impact of improved adherence to treatment plans in chronic disease.
- A research collaboration with Aged Care Services, Caulfield Hospital, investigated the success of a pilot SAM (self-administration of medications) program in hospitalised subacute aged care patients. Supported by a Collier Charitable Fund research grant, the program assessed patients' ability to self-administer their medications when they are discharged home. Forty-three patients of average age 82.1 years were recruited over six months. Twenty-four patients passed the program; others were offered supports to ensure safe medication administration. The SAM program was found to be feasible in the subacute setting and staff resource requirements were quantified. The program was effective in detecting and addressing of barriers to medication adherence in elderly patients.
- A project funded through a Society of Hospital Pharmacists of Australia research grant has enabled one of our staff pharmacists, Ruth Chieng, to provide new services to the multidisciplinary allogeneic stem cell transplant (SCT) outpatient clinic. The aim of the project is to determine if the addition of a pharmacist to the clinic will improve the ability of patients to manage their medications and reduce the incidence of medication related problems after SCT. This project is nearing completion. Preliminary study results show that the pharmacist provides a beneficial service to the SCT clinic.

Josephine McGuinness (left) advises Hospital-in-the-Home Nurse Unit Manager, Katrina Neave, of a patient's warfarin dose.



- A collaboration between The Alfred, Monash Centre for Medication Use and Safety and the National Prescribing Service completed an evaluation of the alert systems contained within the electronic prescribing modules of the Victorian Department of Human Services (DHS) HealthSmart system. This evaluation, funded by DHS, assessed a range of allergy, drug interaction and therapeutic duplication alerts. The study identified a broad representation of drug combinations encountered in hospital practice and evaluated the alerts generated from the Cerner/Multum system. A number of limitations were identified, with key recommendations developed for consideration and action by DHS.
- Pharmacy, together with the Department of Endocrinology and Diabetes, and Diabetes Education, have conducted a series of reviews to assess the monitoring and management of patients at risk of developing steroid-induced diabetes while receiving glucocorticoid agents (prednisolone, dexamethasone hydrocortisone, methylprednisolone). A monitoring and management guideline was developed and approved by the Alfred Health Drug and Therapeutics Committee as part of this work. A significant proportion of patients remain unmonitored or under-monitored; however, there has been an increase in appropriate referral to the Department of Endocrinology and Diabetes, and Diabetes Education as a result of this work.

Other Current Projects

A list of other current projects is available from <http://www.alfredresearch.org/research/researchrep10.htm>

Pharmacist-led Anticoagulant Dosing Service in Hospital-in-the-Home Program

The aim of this study was to evaluate the safety and effectiveness of a pharmacist-led anticoagulant dosing service in a Hospital-in-the-Home (HITH) setting. The study was prompted by a number of warfarin-related incidents in HITH. Data prior to pharmacists' involvement were collected retrospectively.

An anticoagulant dosing competency program was established using local and international resources, together with nursing and medical input. During the initial stages of the service, pharmacists worked in pairs and contacted a treating doctor to confirm dose recommendations. Of the fifty-four patients who were dosed to two consecutive therapeutic INRs in the pre-intervention arm, it took on average 9.9 days to achieve the first therapeutic INR and 12.1 days to achieve two consecutive therapeutic INRs. In the post-intervention arm, the mean time to first therapeutic INR was 7.7 days and to have two consecutive therapeutic INRs was 8.8 days.

These data suggest that a pharmacist-led warfarin dosing service is safe and effective. Subsequent phases of the program will progress to trained competent pharmacists providing the dosing service independently.

Postgraduate Students

1 PhD Student
4 Masters Students

Publications

28 Journal Articles
1 Book
4 Book Chapters

AMREP Research Report 2010

Pharmacy – Other Current Projects

- Assessing the dosing requirements of gentamycin and vancomycin in extra-corporeal membranous oxygenation (Levkovich B, Mousavi S, Padiglione A, Pellegrino V)
- Optimising cefepime dosing in intensive care: the pharmacokinetics of extended (prolonged) infusions (Levkovich B, Padiglione A, Nation RL, Davies A, Poole SG, Dooley MJ)
- Assessment, validation and implementation of 'King Guide to Parenteral Admixtures' online drug compatibility reference (Levkovich B, Bui T)
- Evaluation of a pharmacist-led anticoagulant dosing service in Hospital-in-the-Home program (McGuinness JV, Choo S, Dooley MJ, Street A)
- Improving the transition of highly complex patients into the community: impact of a pharmacist in an allogeneic stem cell transplant outpatient clinic (Cheing R, Coutsouvelis J, Forrester C, Deng A)
- Estimating body weight in hospitalized adults (Corallo C, Cheng A, Dooley MJ)
- Investigating the Integration of complementary medicines in community pharmacy practice (Dooley MJ, Poole SG, Braun L, Tiralongo E, Wilkinson J, Bailey M)
- Antifungal drug use and intensity of investigations performed on patients at high risk of invasive fungal infections: a multicentre prospective observational study (Ananda-Rajah M, Thursky K, Cheng A, Buising K, Morrissey O, Dooley MJ, Slavin M)
- Validation of pharmacokinetic program: MM-USC*Pack (Jelliffe R, University of Southern California, 2008, version 12.10) for predicting vancomycin dosing (Corallo C, Cheng A, Dooley MJ)
- Evaluation of the adverse drug reaction notification process: keeping the patient in the loop (Graudins LV, Hopper I, Fary RJ, Lord J, Dooley M)
- Assessing the bioavailability of sublingual compared to nasogastrically administered tacrolimus after lung transplantation (Ivulich S, Snell G, Whitford H, Dooley MJ, Moradi M, Levkovich B, Poole SG)
- A pilot study exploring the relationship between hand function and the ability to open medication containers in individuals aged 65-85 years (Georgeson E, Roberts E)
- Ritonavir formulation change and bowel symptoms (Penny K, Mackie K, Woolley I, Duncan A, Mostaghim M, Fairley C)
- Comparison of measured renal function with modification of diet in renal disease formula and other 'bedside' estimates: impact on chemotherapy dosing in 310 oncology patients (Dooley MJ, Poole SG)
- Time to first antibiotic administration in the Alfred Emergency and Trauma Centre for suspected febrile neutropenia (Roman C, Bystrycki A, Jones E, Symons M, Walker C, Coutsouvelis J, Dooley MJ)
- Reducing erroneous prescriptions of high doses of insulin in a public hospital: a successful multifaceted multidisciplinary prevention strategy (Dooley MJ, Wiseman M, McRae A, Murray D, Van De Vreede M, Topliss D, Poole SG, Wyatt S, Newnham H)
- WHO high 5s assuring medication accuracy at transitions in care project (Graudins LV, Fary RJ, Choo S, Dooley M)
- The prevalence of error prone abbreviations used in medication prescribing for hospitalised patients: multi-hospital evaluation (Dooley MJ, Wiseman M, Gu G)
- Improving safety and communication processes for managing medications across transition points: perspectives of consumers, carers and health professionals (Manias E, Gerdtz MF, Dooley MJ, Williams AF)
- Putting patient safety first: sharing the lessons learned from dispensing errors and near misses in community (Nation RN, Dooley MJ, Kong DCM)