

CRE in Frailty & Healthy Ageing Pharmacy Research Special Edition

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Pharmacy Research Special Edition

This newsletter edition will focus on Pharmacy research being undertaken within the CRE in Frailty & Healthy Ageing.

This arm of research is led by Associate Professor Simon Bell, an internationally renowned pharmacy researcher and is Associate Professor in the Centre for Medicine Use and Safety at Monash University. His field of expertise include factors associated with polypharmacy in aged care, the impact of drug use on hospitalisation, mortality and frailty; and the impact of medications on older people with cognitive disorders such as Alzheimer's disease and dementia.

Dr Bell has published more than 170 articles in scientific journals, primarily reporting the use of data driven approaches to optimise medicines use. Dr Bell's research has had considerable impact on local, national and international health policy and practice. His research recently led to the Victorian Government Department of Health and Human Services to adopt three new medication quality indicators for residential aged care services. Dr Bell's research into Australia's Home Medicines Review (HMR) program was recently highlighted by Australia's Chief Medical Officer Professor Chris Baggoley and prompted a press release by the Pharmaceutical Society of Australia (PSA). Dr Bell is a former Project Director of the Veterans' MATES Program, a national program that uses administrative data to improve health and medicine use among Australian veterans and their dependents.



A/ Prof Simon Bell

Dr Bell has given presentations in more than 30 countries, acted as an advisor to the World Health Organization and actively collaborates with prestigious international institutions including the Karolinska Institute in Stockholm and Harvard University in Boston.

Farewell from Dr Maarit Korhonen

Dr. Maarit Korhonen is an epidemiologist, pharmacist and pharmacoepidemiology research fellow with the CRE in Frailty and Healthy Ageing returns to Finland.



Dr. Maarit Korhonen

I would like to take this opportunity to thank associate professor Simon Bell and professor Renuka Visvanathan from the CRE for providing me the opportunity to gain insight to the complexity of the clinical situations faced in aged care. After returning to Finland, I have initiated a research project on usage patterns of and outcomes associated with direct anticoagulants funded by the Social Insurance Institution of Finland. The project is based on administrative healthcare data and the study population comprises older people with atrial fibrillation; thus, the insight gained will be most valuable when designing the outcomes part and assessing the validity of its results.

Producing evidence for optimising health outcomes of cardiovascular medicine use among older people

Dr. Maarit Jaana Korhonen, an epidemiologist and pharmacist from Finland and a former pharmacoepidemiology research fellow with the CRE in Frailty and Healthy Ageing.

Despite their widespread use, the evidence on the benefits and risks of preventive cardiovascular medicines is scarce in older adults who are frail or with multimorbidity. Older people with complex medication regimens have typically been excluded from clinical efficacy trials, and even the available trial evidence relates to the efficacy of single medicines rather than combination therapy. Non-randomised studies based on large healthcare databases may help fill the evidence gap.

As part of my work for the CRE, I had an opportunity to produce new evidence on the effects of adherence to various combinations of preventive medicines on survival after acute myocardial infarction (AMI, see “International collaboration provides new insight to beta blocker use after heart attack” in this newsletter). Our team had access to data on a large cohort of Medicare beneficiaries in the USA which allowed us to expand upon previous research by adjusting our analyses for a comprehensive list of potential confounders, including some aspects of frailty. Our results suggest that older patients who adhere to statins and agents acting on renin-angiotensin system may not gain additional benefit from adhering to beta blockers following an AMI. However, we included only patients who filled prescriptions for three preventive medicines after the hospital discharge, were discharged to home and survived at least six months after the discharge. Even if valid, our results cannot be generalized to the frailest subset of patients with AMI.

Estimation of the effects of preventive medication on health outcomes in the long-term care setting may be challenging. Using rich data on a cohort of ~ 400 people living in aged care services in Australia, we demonstrated that people who used statins were different to non-users in terms of several risk factors for mortality and other adverse outcomes, including frailty. Therefore, we believe that the strong protective associations between statin use and the outcomes seen in our analyses and similar previous studies may be largely explained by selective prescribing and de-prescribing of statins based on consideration of each resident’s clinical and frailty status. That is, randomized de-prescribing trials are needed to guide statin prescribing in this setting.

International collaboration provides new insight to beta blocker use after heart attack

Beta blockers not needed after heart attack if other meds are taken, UNC study finds

The US clinical guidelines recommend prescribing beta blockers along with ACE inhibitors and statins for most patients after a heart attack. However, beta blocker trials were largely performed before statin use became widespread, and the benefits of beta blockers among statin-treated patients remains undetermined. Indeed, the Australian and European guidelines recommend more limited use for beta blockers.

A new study, coauthored by CRE research fellow Maarit Jaana Korhonen and Associate Professor Simon Bell, found that patients who didn’t take their beta blockers after their heart attack but did take their ACE inhibitors and statins as prescribed were no more likely to die than patients who took all three medicines as prescribed in long term.

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The study was published in the Journal of the American College of Cardiology, ranked number 1 in cardiology, and was accompanied by an editorial comment and an audio summary by Editor-in-Chief Valentin Fustner. The research team from the University of North Carolina at Chapel, Monash University, the University of Iowa and the University of Eastern Finland was led by Gang Fang, PharmD, PhD, an assistant professor at the UNC Eshelman School of Pharmacy and senior author of the study.

The study followed more than 90,000 US Medicare beneficiaries aged 65 years or older who had suffered a heart attack and were prescribed a beta blocker, ACE inhibitor (or angiotensin receptor blocker) and statin. Heart-attack survivors who filled prescriptions for all three medicines were followed for six months to determine how well they adhered to their prescription drug regimen. Being adherent was defined as taking the medicines as prescribed at least 80 percent of the time. The patients were then followed for up to 18 months to see how many died during that time.

Only about half of the patients (49 percent) took their medicines as prescribed, the study found. Six months after their heart attack, about half the patients in the study had stopped taking at least one of their medications as prescribed. “This estimate is most likely too optimistic as we included only patients who filled prescriptions for all three medicines at a community pharmacy after the discharge from hospital. In addition, we had no way of knowing whether the patients actually consumed their medicines”, says lead author Korhonen.

Korhonen also noted that patients in the study who had diabetes or dementia were more likely to die when taking beta blockers as prescribed. However, further research is warranted, she said.

Finally, the researchers emphasize that no patient should stop taking their regimen of beta blockers or any other prescription medicine without first consulting their doctor.

Research Fellow Dr Sarah Hosking joins the Team.

Dr Sarah Hosking, Research Fellow , Centre for Medicine Use and Safety, Monash University

I have recently started work with Associate Professor Simon Bell as a Research Fellow within the Centre for Medication Use and Safety (CMUS) at Monash University and the Centre for Research Excellence in Frailty and Healthy Ageing.

I became interested in ageing and health as a PhD student at the Epi-Centre for Healthy Ageing at Deakin University. My recently submitted PhD thesis investigated associations between health literacy (the abilities and supports which enable an individual to manage their health) and uptake of lifestyle related osteoporosis prevention behaviours.

Older adults, who are more likely to be managing comorbidities with often complex treatment plans, are also more likely to have poorer health literacy than their younger counterparts. It's clear that there are many opportunities to ensure we are health literacy responsive in the way we provide health information and healthcare for this age group. My passion for highlighting the importance of



Dr Sarah Hosking,

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health literacy in health communication and healthcare has led me to present workshops and lectures on health literacy for clinicians and consumers as well as become an active member of Barwon Health's Health Literacy Strategic Reference Group.

I have also had the privilege of presenting my research at conferences, both local and international, resulting in a number of awards including a Young Investigator Award at the International Osteoporosis Foundation Asia Pacific Regional conference in 2016 and an IOF-ESCEO UCB Fellowships presented at the World Congress on Osteoporosis in 2017.

In my role as Research Fellow at CMUS and the CRE in Frailty and Healthy Ageing I have recently started work on projects related to preventable hospitalisations from residential aged care and am looking forward to working on frailty related projects in the near future.

How often are 'as needed' or 'when required' medicines actually administered in residential aged care services?

A new study, co-authored by Dr Janet Sluggett and Professor Simon Bell, has investigated the frequency of administration of medicines prescribed for use 'as needed' or 'when required' in South Australian residential aged care services.

This study was conducted as part of an ongoing research collaboration between the Centre for Medicine Use and Safety at Monash University and Resthaven Incorporated. The study results were recently published in the journal *Research in Social and Administrative Pharmacy*.

Residents of aged care services often have multiple health conditions and take multiple medicines each day. In addition to medicines prescribed for use every day, residents may also be prescribed medicines for use 'as needed' or 'when required'. There are very limited data available as to how often these medicines are actually administered to residents. The study assessed medicine use over a seven day period among residents of six residential aged care services. Almost all residents (94%) were prescribed at least one medicine 'as needed' or 'when required', with pain relievers and medicines for treating constipation frequently prescribed. However, only 28% of residents prescribed an 'as needed' or 'when required' medicine were administered the medicine over the seven day study period. This is relatively low in comparison to the results of previous Australian research conducted more than 20 years ago. Reasons for this may include better recognition and management of symptoms such as pain or constipation, or changes in the characteristics of residents or the aged care workforce since previous studies were conducted.

If you are prescribed a medicine for use only 'as needed' or 'when required', it's important to know what the medicine is for, how much to take, how often it can be taken and whether it is safe to take with your other medicines.

If you have specific questions about your medicines, ask your pharmacist or doctor for further advice, or call Medicines Line on 1300 633 424 (1300 MEDICINE).

Contact Us

For further information on the

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