The effects of cardiovascular disease burden on frailty and disability
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It was almost 400 years ago that Thomas Sydenham first noted that, “A man is as old as his arteries.” While much of the focus on cardiovascular disease relates to specific clinical syndromes of myocardial infarction, stroke and heart failure, we now recognize that some aspects of aging are consequences of the extent of vascular disease. Important aspects of vascular aging include atherosclerotic disease – which increases with age, even in the absence of hypertension, smoking or lipid disorders – and vascular stiffening which has a major impact on small vessel damage in the kidneys and brain. Tests of vascular structure and function illustrate that vascular disease can be quite extensive and without classic symptoms. Nevertheless, it is strongly associated with poorer physical and cognitive function and greater frailty. Conversely, low levels of vascular disease are associated with longevity and high levels of function. A bonus of the prevention of cardiovascular disease is a likely increase in active life expectancy.

Exercise and cognition
Nicola Lautenschlager
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Aims: Factors such as physical inactivity, cognitive inactivity, depression as well as midlife hypertension, heart disease, smoking, hypercholesterolemia, midlife obesity and diabetes have been identified as risk factors contributing to cognitive decline in older age. This presentation aims to give an overview on the current evidence of how exercise has the potential to improve cognitive and mental health in older adults.

Methods: Evidence from the current literature as well as data from randomized trials such as FABS, FABS II, Aibl Active, IMPACCT and INDIGO will be discussed.

Results: Older adults with normal cognition, Mild Cognitive Impairment (MCI) and dementia can potentially benefit from regular exercise not only physically, but also in relation to their mental and cognitive health. The underlying mechanisms of this effect are considered to be complex with a combination of direct and indirect pathways affecting brain health.

Conclusions: Regular exercise should be mentioned when lifestyle advice is given to middle-aged and older adults not only to protect somatic health, but also mental health. Therefore an increased effort is called for to identify effective strategies how to best motivate sedentary Australians to become more physically active.

Can we prevent depression?
Michael Berk
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Aims: Prevention strategies have made a major contribution to the considerable successes in reductions in cardiovascular disease and cancer mortality seen in recent decades. However, in the field of psychiatry, similar population-level initiatives in the prevention of common mental disorders, depression and anxiety, are noticeably lacking. This lecture aims to provide a brief overview of the existing literature on the topic of the prevention of common mental disorders and a commentary regarding the way forward for prevention research and implementation.

Methods: This lecture considers what we currently know, what we might learn from the successes and failures of those working in prevention of other high prevalence health conditions, and where we might go from here.

Results: Diverse lifestyle social and psychological and biological factors contribute to vulnerability. Many of these biological social and environmental factors are transduced via common pathways. The consensus from a large body of evidence supports the contention that interventions to prevent mental disorders across the lifespan can be both effective and cost-effective. However, funding for research in the area of prevention of common mental disorders is considerably lower than that for research in the areas of treatment, epidemiology and neurobiology. Thus, there is a clear imperative to direct funding towards prevention research to redress this imbalance. Future prevention interventions need to be methodologically rigorous, scalable to the population level and include economic evaluation. Evidence-based
knowledge translation strategies should be developed to ensure that all stakeholders recognise preventing mental disorders as an imperative, with appropriate resources directed to this objective.

**Conclusions:** There has been a recent expansion of research into potentially modifiable risk factors for depression, and it is now timely to make a concerted effort to advance the field of prevention of common mental disorders. Addressing the social, psychological lifestyle, medical and biological drivers in a personalized, formulation based, and integrated manner has the capacity to reduce the overall burden of disease.

**IN05**

**Hip fracture management/registry**

Jacqueline Close  
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Each year there are approximately 17,000 new hip fractures in Australia and 4,000 in New Zealand. Despite a reduction in rate of hip fracture over time, the absolute number of hip fractures being admitted to our hospitals continues to increase.

There are a number of aspects of hip fracture care and management that have been shown to influence outcome both for the patient and for the health system.

This presentation will cover a number of aspects of hip fracture care in Australia and New Zealand including:

1. The ANZ Guideline for Hip Fracture Care
2. Development of ANZ Standards of Care for Hip Fracture
3. Results from facility level audits across Australia and New Zealand
4. Pilot patient level data including evidence of unwarranted clinical variation
5. Plans for the ANZ Hip Fracture Registry

**IN06**

**Perioperative cardiac injury**

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Northern Health, Epping, Victoria, Australia

There is strong evidence that perioperative cardiac injury, as measured by cardiac biomarkers such as troponin, in non-cardiac surgery, leads to an increase in mortality in patients. Traditional recommendations with regards to beta-blockers in the perioperative remain controversial. Results from various large randomised controlled trials such as POISE and POISE 2 have been disappointing with perioperative medical treatment not leading to a reduction in post operative mortality.

We have demonstrated increases in mortality related to orthopaedic surgery in association with perioperative cardiac injury using multiple different cardiac biomarkers. Results from a randomised trial in post operative cardiac care will be presented as well as ongoing studies in this area.

**IN07**

**Cognition and anaesthesia**

Brendan Silbert  
St Vincent’s, Fitzroy Victoria, Australia

Approximately 3 million anaesthetics are administered in Australia every year. Those over the age of 65 constitute only 13% of the population but they receive about 32% of all anaesthetics. By 2050 this group will constitute 24% of the population will receive 48% of all anaesthetics. While immediate complications of anaesthesia have decreased dramatically, long term complications have been the focus of much research.

That anaesthesia can lead to CNS complications is well known. Cognitive change, delirium and even depression are known to follow anaesthesia and surgery. Although there were early reports of cognitive changes following anaesthesia and surgery as early as 1887, systematic studies were not instituted until the 1980’s.

Postoperative cognitive dysfunction (POCD) is defined as an objective change in cognition following anaesthesia and surgery which is usually confined to the elderly. Initial reports related POCD as a consequence of cardiac surgery, particularly the cardiopulmonary bypass machine. For almost twenty years, the CPB remained the villain, but was finally exonerated when it was shown that off-pump surgery produced the same incidence of POCD. Around the same time POCD was shown to occur after non-cardiac surgery in the elderly. Further studies have shown that POCD follows when regional anaesthesia is used in the elderly or even after surgery with no anaesthesia at all!

The similarities between cognitive change which follows anaesthesia surgery and that which occurs in the general population at large cannot be ignored. Our understanding of a long prodromal period and high prevalence of Alzheimer’s
disease may indicate that those already on a downward cognitive trajectory who undergo surgery may be subjected to further cognitive decline. If this is indeed the case, the story of cognitive decline after anaesthesia and surgery represents sound scientific discovery based on a modifying the hypothesis in response to each new finding.

### IN08

**Obesity in the elderly – beyond the obesity paradox**

*Cilla Haywood*¹²

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The prevalence of obesity in older persons has been increasing in recent years. The science of obesity management in younger adults and children has progressed in recent years, however the literature pool addressing the issue in older adults is still small. It is known from large epidemiological studies that obesity in middle age and onwards can predispose to functional and cognitive decline, and worsen prevalent diseases such as type 2 diabetes, osteoarthritis and sleep apnoea. Other studies in cardiovascular disease have revealed that obese people have lower mortality; the obesity paradox. This presents aged care health professionals with a treatment conundrum.

This session will address the recent advancements in obesity management in younger adults. It will go on to discuss the evidence regarding obesity in older adults; the particular complications and the intricacies of management. Part of the presentation will be devoted to deconstructing the evidence regarding the obesity paradox. The aim of the session is to make attendees aware of the emerging pool of evidence, and give guidelines for who to treat, and how to treat older obese adults.

### IN09

**Do we all really want to live as long as possible?**

*Charlie Corke*

Barwon Health, Geelong, Victoria, Australia

Today we are likely to live into extreme old age – but with significant debility and disability towards the end. In our struggle to prevent death we can easily end up living badly and dying awfully. We frequently go on until it is obvious that there is no chance. But modern medicine has made futility a vague and distant prospect, something that is only recognizable after all medical options have been exhaustively tried and have been clearly shown to have failed. This process of proving futility inevitably involves a lot of technology – and can go on a long time.

This sort of end is very different to the rather gentle and perhaps mystical death, surrounded by loved ones, to which most of us aspire. This has become a serious dilemma for us all. For us, for our parents, and for everyone we love. To avoid excessive use of medical technology needs bravery, determination and very clear instruction from the person themselves.

How far to go is a personal choice – but a choice that most people, knowingly or unknowingly, delegate to family and doctors.

Without clear instruction both families and doctors act on the assumption that everyone wants to live as long as possible, whatever it takes and however poor the outcome. This is so compelling and so easy.

None of this would matter if everyone does want ‘to live as long as possible, whatever it takes and however poor the outcome’. However our research of over 1000 people (the biggest ever survey of the issue) using established Best-Worst Scoring that forces prioritisation of values demonstrates that 93% of people prioritise other things above longevity.

Extending this finding we have created a web application that helps patients to identify those values that are most important for them and that creates a personal report based on an analysis of these values. Further research has identified that this Values Report provides adequate authority for doctors to feel comfortable to withhold life support treatment (where the report suggests this).
Novel approaches to advance care planning: advance care planning in 3-steps

Barbara Hayes
Northern Health, Epping, Victoria, Australia

Advance Care Planning (ACP) is now becoming, and expected to become, part of usual patient care. How can Clinicians fit this into an already busy schedule of patient management?

This presentation will describe ‘Advance Care Planning in 3-Steps’, an approach that is easy to introduce to patients from all cultural and religious backgrounds. ACP essentially asks the patient a question: “If you become ill and cannot talk to your doctor, who will make medical decisions for you, and how will they know what you want?”

ACP can be broken into manageable elements that focus on appointing a substitute decision-maker and encouraging a conversation between that person and the patient. This can be done as part of usual practice. Clinicians are already doing ACP, even if they don’t identify it as such. Formal ACP Programs give structure to this process so that it can be done better and so that communications are accessible to the next clinician who sees that patient.

Chronic wounds a systematic approach

Geoff Sussman
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Wounds in general and leg ulcers, pressure sores and skin tears in particular are common problems in an ageing population. To fully understand the nature and causes of these chronic wounds it is essential to consider the main physiological effects of ageing on tissue and the factors that influence healing. The ageing process will impact on most of the structures of skin. Skin loses hair follicles, sebaceous glands that supply natural moisture to the skin, receptors, blood supply and sweat glands. The result of these tissue changes is that the skin becomes thinner, brittle, avascular and more prone to injury.

Co-morbidities will impact on wound healing and many factors both intrinsic and extrinsic will have a significant impact on wound healing.

Leg ulcers have a number of different causes, including venous insufficiency, arterial disease, a combination of both, diabetes mellitus, vascular complication of auto-immune disease (such as rheumatoid arthritis) malignant disease, trauma and deliberate self injury.

Pressure Ulcers are the most preventable of all of the chronic wounds.

Pressure wounds may be as simple as the blister most of us may have experienced over the years from footwear-to the extensive pressure sores experienced by bedridden patients suffering from stroke, spinal injury, multiple sclerosis and dementia.

The role of palliative and supportive care services in the management of advanced heart failure is now well established. Despite this, there remains a limited number of patients with advanced heart failure who are able to access palliative care services, and usually do so late in the disease process. The palliative care service at Cabrini Health is an integrated multidisciplinary specialist palliative care service. We describe the development and implementation of an innovative chronic disease and heart failure program which encompasses a shared care model; enabling the concomitant provision of active treatment with palliative and supportive care in patients with advanced heart failure. We describe the use of validated tools, evidence based triggers and models of care in the identification and overall management of patients with advanced heart failure.

Evidence based medicine and decision making

Paul Glasziou
Bond University, Queensland, Australia

Trials and systematic reviews are helpful as a starting point in understanding the effects of interventions, but are insufficient for decision making which requires absolute benefits and harms to be made clear. Those benefits and harms will vary not only with the severity of the patient’s condition, but with their circumstances and co-morbidities. This talk will look at interpreting the trials applicable to older patients with multiple conditions, and the use of the methods of the Cochrane
Applicability and Recommendations Group which aims to provide guidance to reviewers to answer the questions “To whom do the results of the systematic reviews apply?” and “What are the implications for patients and policy?” The preferred approach for applying evidence to individuals is based on risk-benefit model. This approach will include a 5 step process to examine the transferability of results and then apply them to different groups and individuals, using 5 steps: 1. Develop a clinical balance sheet of the beneficial and harmful, 2. Is there predictable variation in any of the relative effects? 3. How do the effects vary with risk level? 4. What are the predicted absolute risk reductions for individuals? 5. Weigh up overall benefits and harms.

However, these steps need to adapt to the patients conditions, circumstances and priorities.

References

Venous thromboembolism management

Harry Gibbs
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Venous thromboembolism (VTE) is common and dangerous. The incidence of VTE increases markedly with increasing age. Deep vein thrombosis (DVT) is complicated by pulmonary embolism (PE) in 25% of cases if untreated. PE results in death in 25% if untreated. Anticoagulants are highly effective in reducing the complications of VTE. The traditional paradigm of a heparin (usually low molecular weight heparin) followed by warfarin has been challenged by the introduction of the new oral anticoagulants. Rivaroxaban and apixaban have both been shown to be as effective and at least as safe as warfarin and can be used without initial heparin.

The recurrence rate is reduced to its nadir after three months of anticoagulation. At that stage the risk of ongoing anticoagulation should be compared to the risk of recurrent VTE to determine whether ongoing anticoagulation is indicated. The major predictor of recurrence is whether the initial episode was provoked by a transient provoking factor or not. Aspirin provides a modest benefit in secondary prevention, although this is much less than the reduction achieved by oral anticoagulation. The new oral anticoagulants are effective in reducing recurrence, although the optimal duration remains uncertain.

The post thrombotic syndrome (PTS) complicates DVT in 60% of cases. Graduated compression stockings reduce the development of the PTS by 50% but are under utilised.