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Developing future injury prevention research leaders – in support of 'mentoring'

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Injury prevention and control was recognised as one of the first national health priority areas in Australia, and rightly so.[1] Despite injury remaining as the leading cause of mortality in Australians aged one to 44 years,[2] research resources, including the number of injury prevention researchers, have been very limited in Australia.[3] In their recent editorial, Daly and Lumley identified the importance of 'taking care' of early career public health researchers if we are to build up the necessary capacity.[4] They raised the infrastructure support provided by the National Health and Medical Research Council (NHMRC) Capacity Building Grants in Population Health as a potential way to maintain the 'nurturing' essential for career development. Our experience with such a grant for injury and trauma researchers indicates that they are an effective way of developing public health research capacity, and we argue that they are critical to our field. The Injury, Trauma, Rehabilitation (ITR) collaboration brings together established senior researchers (i.e. lead applicants) with national and international reputations and postdoctoral fellows (i.e. team investigators) with future research leadership potential. Both are drawn from a consortium of research centres and the collaboration is multi-disciplinary in nature, with expertise across the areas of behavioural science, biomechanics, biostatistics, epidemiology and public health.

Because mentoring and supervision are a central feature of the Capacity Building Grants Program scheme, they are formalised as valid, funded activities, for which lead applicants are accountable. These are factors that have been recognised as encouraging sustainability in academic settings.[5] In our case, lead applicants supervise the specific research program of a team investigator from the same institution for the duration of their involvement with the grant. Mentorship is provided by a different lead applicant at another research group, the aim being to expose the team investigator to a broader set of public health knowledge, skills and experience. Mentors are allocated and rotated on an annual basis, so over the course of the grant, team investigators will have experienced a few mentors.

Our budget contains 'quarantined' funds to provide for the collective professional development of team investigators, as well as providing support directly to the team investigators for their own individual needs. We feel this has 'value-added' to the supervision and mentoring activities because, as skill deficiencies have been identified, team investigators have been able to source the necessary support to meet these needs. Career development has occurred through group training programs (including sponsorship of workshops with visiting international researchers) and through attendance at courses specific to the needs of individuals. Topics covered have included public health advocacy, appreciation of the policy setting context, relevance of laboratory approaches to public health research, international data collection approaches, and statistical design and analysis methodologies. In addition, the team investigators were active members of the scientific and organising committees for the 2006 Australian Injury Prevention Network Conference.

We believe the other essential aspect of our ITR Capacity Building Grant for developing research capacity in public health is the length of the support. The five year period is a realistic one in which career establishment can occur, and is long enough to allow for the establishment of research collaborations and partnerships across institutions and between researchers. Research partnerships have seen the combination of the strong track-record of lead applicants with the developing track-record of team investigators, increasing the likelihood for team investigators of successful grant applications. Funded projects have provided opportunities for team investigators to be supervised and mentored by lead applicants in good research practice, an activity which as been recommended by the NHMRC Code for the Responsible Conduct of Research.[6]

As Daly and Lumley (2008) observe, there is support in the health literature for mentoring to assist career development in less experienced colleagues; and many academic institutions promote this activity. In an attempt to redress the historical neglect of violence and injury prevention as a public health issue, the World Health Organization (WHO) has developed a global mentoring program as a way of increasing skilled human resources able to research, implement and promote injury prevention.[7] However, an often stated barrier is that mentoring is seen as being 'additional to normal duties' and consequently difficult to sustain. Through it being a key component of ITR, the mentoring and supervisory aspect has been built in to the expectations of the work approach and achievement of all lead applicants and team investigators.

The public health community has always been the 'poor research cousin' to clinical medicine, and career paths in public health research (especially in injury) have been difficult to establish and sustain.[3] However, through the ITR Collaboration, we are now seeing some of the 'fruits' of increased attention to capacity development in the injury prevention research field. Already, a number of the ITR team investigators have moved on to their own research leadership roles or achieved their own NHMRC career research support, allowing new investigators to join the collaboration. We believe therefore, that to continue to redress the inequity in public health research career development, the support to nurture new careers in public health research provided by Capacity Building Grants is essential, and the public health community should be actively advocating for their continuance.

Written on behalf of the ITR Collaboration which comprises:

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Community Medicine (SPHCM), University of New South Wales (UNSW); Prof Stephen Lord (Prince of Wales Medical Research Institute (POWMRI), UNSW), A/Prof Ann Williamson (Injury Risk Management Research Centre (IRMRC), UNSW) and Prof Ian Cameron (Rehabilitation Studies Unit, USyd)

Past and present team investigators: Dr Shahid Ullah and Dr Rebecca Dennis (HMSS, UB); Prof Kathleen Clapham, A/Prof Rebecca Ivers, A/Prof Rahki Dandona and Dr Teresa Senserick (GI, USyd); Dr Julie Hatfield and Dr Shauna Sherker (IRMRC, UNSW), Dr Rosyln Poulos (SPHCM, UNSW); Dr Daina Sturnieks and Dr Anne Tiedemann (POWMRI, UNSW).

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Response to: Tobias et al. on the decline of CHD mortality in New Zealand

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In their paper, Tobias et al.[1] state that dietary trends are less comprehensive and reliable than data on other risk factors but they recognise the possible importance of diet in the decline in CHD mortality in New Zealand. We would like to submit further data on diet in relation to the fall in CHD mortality in Australia and the US.

Dwyer and Hetzel[2] reported the fall in CHD mortality in Australia with a similar fall in the US from 1970 (Figure 1). Such a fall did not occur in the UK (England and Wales) until after 1980 (Figure 1). Data based on FAO apparent food consumption figures indicated an increase in polyunsaturated fat (margarine) consumption in the US and Australia. But no such change occurred in England and Wales over the same period.

More detailed data from Australia[3] confirmed the rise in apparent consumption of vegetable fat and fall in animal fat consumption after 1960 (Figure 2).

The data on apparent consumption in the US and England and Wales were independently supported by the results of adipose tissue biopsy which confirmed the rise in polyunsaturated fat (linoleic acid) consumption in the US but no such change had occurred in England and Wales.[4]

Subsequent studies documented the fall in sudden death as a major component of the fall in CHD mortality in US[5] and Australia.[6] Similar falls in sudden death with reduction in consumption of dairy products with rise in vegetable fats was observed in New Zealand.[7]

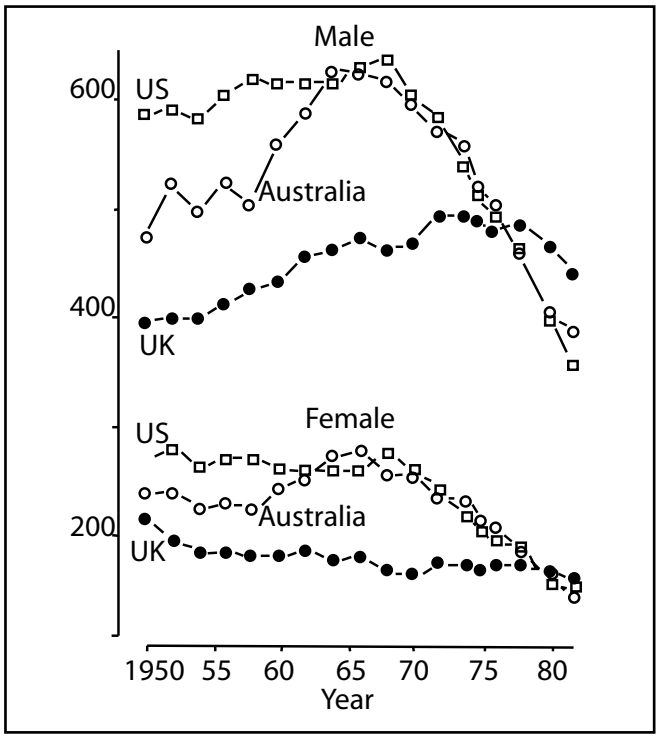
This led to an experimental study in rats of the cardiac effects of an unsaturated fat diet (sunflower seed oil) compared to a diet containing sheep kidney fat, administered over a period of 12-18 months.[8] Comparisons were made between rat heart muscle strips subjected to isoprenaline stimulation in a pharmacological bath. These studies revealed that the saturated fat diet was associated with a much higher rate of dysrhythmia and asystole than the unsaturated fat diet.

These findings were confirmed in the marmoset monkey with a fat metabolism more comparable to the human.[9]

These findings suggest a relation between an increase in polyunsaturated fat consumption and reduction of sudden death due to cardiac arrhythmia.

They suggest that a major factor in the massive fall in CHD mortality (apparent at all ages and both sexes) is dietary change

Figure 1: Coronary heart disease mortality: US, UK (England and Wales), Australia 1950-1985.



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