AUSTRALIAN AND NEW ZEALAND JOURNAL OF PUBLIC HEALTH

Using the Australian and New Zealand Journal of Public Health as a research and teaching resource

Volume 2: Research that accesses existing data sets

Editor: Amy Nisselle



The Public Health Association of Australia Inc.

The e-book from PHAA

Survey research provides the foundation data for much of public health practice. This selection of key articles on survey research is intended to be useful to research methods teachers and researchers.

This e-book includes a selection of papers from *ANZJPH*. It covers a range of survey research styles and types. Many other examples are to be found in *ANZJPH*.

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Several further e-books are planned, and suggestions for additional topics are welcome.

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Foreword

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It is always worth reflecting on how researchers can design studies that utilise existing data sets rather than collecting new data. Not all research requires new data to be collected. In the same way that museums are turning their attention to re-curating collections (for example, Museums Australia's 2010 conference "Interesting Times: New roles for collections") researchers can also repurpose or 'mine' existing data sets to address novel research questions. The aim of this e-book is to assist researchers, teachers and students of public health by collecting papers from past issues of ANZJPH that exemplify this methodology.

The book compiles 32 papers into six sections and begins with papers that illustrate the methodological issues of using existing data, including record linkage. There is a section on infectious diseases, where surveillance data has historically underpinned key public health initiatives and a section focused on indigenous health, where the use of existing data serves to protect people who may see themselves as over-researched. The last two sections contain papers that illustrate how existing data sets can be combined and extended. The papers were selected as they represent research that accessed existing data but the papers cross many disciplines and populations, different types of data and the findings have varied implications, including recommendations for methodology, public health and policy.

The development of methodology in using existing data sets is prefaced with an editorial about the balance to be struck between 'publication redundancy' – where authors data 'dredge' – and the re-analysis of data sets to answer novel research questions. The papers in this section present methods for linking data from multiple sources and/or organisations, including ensuring rigour in sampling, determining inaccuracies in national statistics for overweight and obesity via comparisons of existing data sets and how record linkage was used to reveal under-reporting of Western Australian Indigenous mortality. Two papers describe how combining existing datasets helped determine population norms for quality of life measures and how data sets could be combined and complemented with new data to determine the effectiveness of a housing program.

The technique of record linkage initially raised concerns about the confidentiality of records but a balance has been found to allow public health researchers to conduct important public health research. Four papers are included in this book, covering topics as diverse as suicide rates, Indigenous heart disease and health equality in Australia and New Zealand. Record linkage of governmental statistics and coroner's data revealed underestimates of suicide rates in Australia while linking hospital records with national health records in New Zealand helped determine the status of coronary heart disease in Māori. Record linkage was also used to map amenable mortality in New Zealand from 1981 to 2004 and to link state health records and a previous research study, revealing that recording of Indigenous status was increasingly reliable in Western Australia.

Methods that access existing datasets are common throughout the literature on infectious diseases. Six papers are included in this book, beginning with an editorial that highlights the importance of using existing surveillance mechanisms for research purposes. Existing serology data were analysed to map the prevalence of Ross River Virus in South Australia while a review of hospital records in New Zealand provided insights into early identification of influenza outbreaks. A literature review confirmed the relationship between pet-bird ownership and respiratory illness and a novel study design that mapped vaccine ordering patterns during a media campaign around public awareness of free vaccination revealed the success of the campaign. Also included in this book is a paper where the researchers reconciled medical notes for regional Western Australian prisoners, revealing a higher incidence of infectious disease amongst Indigenous inmates was tempered by effective public health interventions.

Papers on Indigenous health are included throughout this book, as well as the four papers included in this separate section. An examination of hospital records mapped the seroprevalence and prevention strategies for Hepatitis B in Indigenous women giving birth in the Northern Territory and the different rates of interpersonal violence Indigenous and non-Indigenous Australian communities. A reconciliation of school dental data and geography of fluoride in water supplies confirmed the benefits of fluoridation for Indigenous communities. Accessing death records of Western Australians for over 100 years also allowed an historical perspective on Indigenous mortality.

Four papers are included in this book to exemplify how existing data sets can be combined to provide new insights. Geo-coding existing data revealed patterns on the incidence of melanoma in South Australia and access to termination of pregnancy services in New Zealand. Combining data from several school-based surveys of health and fitness helped map the extent of overweight and obesity in Australian children and trends in children's physical activity over a 16 year period.

The last section of this book includes six papers that extended existing data sets, either through repurposing of data to answer novel research questions or by complementing the data set with new data. For example, analysis of the 1993 OECD health database to examine health care and expenditure in Australia compared with other member countries. Trends in medication prescription, dispensing and errors in Australia were evaluated by combining national data sets and complementing data logged by the Victorian Poisons Information Centre with follow-up survey data. On a population-based level, trends in the Australian consumer price index were determined over nearly two decades while a comparison of Australian and New Zealand census data with WHO data helped map the extent of Pacific Island health worker brain drain. The last paper discusses how health surveillance data routinely collected by the Australian military can be used to identify trends in health and risk factors.

This e-book is intended to be a repository of examples of highquality public health research that accesses existing data sets to answer novel research questions that can be used by teachers and students in a variety of public health disciplines.

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Methodological issues

Publication redundancy: a case of deja vu or where have I read this before? John B. Lowe	Aust NZ J Public Health 2009; 33,1:3–4
Research use of linked health data – a best practice protocol Christopher W. Kelman, A. John Bass and C. D'Arcy J. Holman	Aust NZ J Public Health 2002; 26,3:251–255
Health services research using linked records: who consents and what is the gain? Anne F. Young, Annette J. Dobson and Julie E. Byles	Aust NZ J Public Health 2001; 25,5:417–420
What is the impact of missing Indigenous status on mortality estimates? An assessment using record linkage in Western Australia Glenn K. Draper, Peter J. Somerford, Albert (Sonny) A. G. Pilkington and Sandra C. Thompson	Aust NZ J Public Health 2009; 33,4:325–331
Population norms and meaningful differences for the assessment of quality of life (AQoL) measure <i>Graeme Hawthorne and Richard Osborne</i>	Aust NZ J Public Health 2005; 29,2: 136–142
Estimating equations to correct self-reported height and weight: implications for prevalence of overweight and obesity in Australia <i>Alison J. Hayes, Michael A. Kortt, Phillip M. Clarke and Jason D. Brandrup</i>	Aust NZ J Public Health 2008; 32,6: 542–545
The state of residential care for people with mental illness: insights from an audit of the screening tools for entry to licensed residential facilities	Aust NZ J Public Health 2009; 33,2: 140–143

Lauren J. Bailey and Rosemary J. Sheehy

Record linkage

The impracticable nature of consent for research use of linked administrative health records. <i>C. D'Arcy J. Holman</i>	Aust NZ J Public Health 2001; 25(5): 421–422
Public good through data linkage: measuring research outputs from the Western Australian Data Linkage System. <i>E. Brook, D Rosman, C. D'Arcy J. Holman</i>	Aust NZ J Public Health 2008; 32(1): 19–23
The burden of coronary heart disease in Maori: population-based estimates for 2000-02 <i>Martin Tobias, Li-Chia Yeh, Craig Wright, Tania Riddell, Wing Chuek Chan,</i> <i>Rod Jackson and Stewart Mann</i>	Aust NZ J Public Health 2009; 33,4: 384–387
Suicide decline in Australia: where did the cases go? Amr Abou Elnour and James Harrison	Aust NZ J Public Health 2009; 33,1: 67–69
Measuring the gap: accuracy of the Western Australian hospital morbidity data in the identification of adult urban Aboriginal and Torres Strait Islander people <i>Pamela J. Bradshaw, Helman S. Alfonso, Judith Finn, Julie Owen and Peter L. The</i>	Aust NZ J Public Health 2009; 33,3: 276–279 Ompson
How much does health care contribute to health gain and health inequality?: trends in amenable mortality in New Zealand 1981–2004 <i>Martin Tobias and Li-Chia Yeh</i>	Aust NZ J Public Health 2009; 33,1: 70–78

Infectious disease

Infectious disease surveillance: doing what we already do better Aileen J. Plant and R. Louise Rushworth	Aust NZ J Public Health 1996; 20,1: 6–7
Environmental and entomological factors determining Ross River virus activity in the River Murray Valley of South Australia Craig R Williams, Stephen R. Fricker and Michael J. Kokkinn	Aust NZ J Public Health 2009; 33,3: 284–288
Pet birds and risks of respiratory disease in Australia: a review Jessica Gorman, Angus Cook, Chantal Ferguson, Paul van Buynder, Stan Fenwick and Philip Weinstein	Aust NZ J Public Health 2009; 33,2: 167–172
The role of television advertising in increasing pneumococcal vaccination coverage among the elderly, North Coast, New South Wales, 2006 <i>Cate Wallace, Paul Corben, John Turahui and Robin Gilmour</i>	Aust NZ J Public Health 2006; 32,5: 467–470
Prison health and public health responses at a regional prison in Western Australia Marisa Gilles, Elysia Swingler, Corryn Craven and Ann Larson	Aust NZ J Public Health 2008; 32,6: 549–553

Indigenous health

Hepatitis B prevalence and prevention: antenatal screening and protection of infants at risk in the Northern Territory <i>Rosalie Schultz, Finn Romanes and Vicki Krause</i>	Aust NZ J Public Health 2008; 32,6: 575–576
Association of natural fluoride in community water supplied with dental health of children in remote Indigenous communities – implications for policy Ross S. Bailie, Matthew Stevens, Jason M. Armfield, Jonathan P. Ehsani, Mary Beneforti and John Spencer	Aust NZ J Public Health 2009; 33,3: 205–211
Deaths in Broome, Western Australia, 1883 to 1994 Michael Gracey and Randolph M. Spargo	Aust NZ J Public Health 1996; 20,5: 505–511
Hospital admissions of Indigenous and non-Indigenous Australians due to interpersonal violence, July 1999 to June 2004 <i>Jesia G. Berry, James E. Harrison and Philip Ryan</i>	Aust NZ J Public Health 2009; 33,3:215–222

Combining data sets

The geography of melanoma in South Australia Adrian R. Heard, Brendon. J. Coventry, Bridget Milanowski and Danielle Taylor	Aust NZ J Public Health 2009; 33,2:105–108
Geographical access to termination of pregnancy services in New Zealand <i>Martha Silva and Rob McNeill</i>	Aust NZ J Public Health 2008; 32,6: 519–521
Trends in children's physical activity and weight status in high and low socio-economic status areas of Melbourne, Victoria, 1985-2001 <i>Jo Salmon, Anna Timperio, Verity Cleland and Alison Venn</i>	Aust NZ J Public Health 2005; 29,4: 337–342

Aust NZ J Public Health 2001; 25,2: 162-169

The epidemiology of overweight and obesity among Australian children and adolescents, 1995–97 *Michael L. Booth, Melissa Wake, Tim Armstrong, Tien Chey, Kylie Hesketh and Sushma Mathur*

Extending existing data sets

Health care expenditure and life expectancy in Australia: how well do we perform? <i>Richard Taylor and Glenn Salkeld</i>	Aust NZ J Public Health 1996; 20,3: 233–240
Therapeutic errors involving adults in the community setting: nature, causes and outcomes David McD Taylor, Jeffrey P. Robinson, Dawson S. MacLeod, Catherin E. MacBean and George Braitberg	Aust NZ J Public Health 2009; 33,4: 388–394
Increased patient co-payments and changes in PBS-subsidised prescription medicines dispensed in Western Australia Anna Hynd, Elizabeth E. Roughead, David B. Preen, John Glover, Max Bulsara and James B. Semmens	Aust NZ J Public Health 2009; 33,3: 246–252
Australia and New Zealand's contribution to Pacific Island health worker brain drain <i>Joel Negin</i>	Aust NZ J Public Health 2008; 32,6: 507–511
Longitudinal study of Consumer Price Index (CPI) trends in core and non-core foods in Australia <i>Cate Burns, Gary Sacks and Lisa Gold</i>	Aust NZ J Public Health 2008; 32,5: 450–453
The Deployment Health Surveillance Program: vision and challenges of health surveillance for Australian military cohorts <i>Christopher A. Barton, Annette Dobson, Susan A. Treloar, Christine McClintock and</i> <i>Alexander C. McFarlane</i>	Aust NZ J Public Health 2008; 32,6: 529–534



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