

# Making innovative use of cohort data

Julie Byles<sup>a,b,c</sup>

<sup>a</sup> Research Centre for Generational Health and Ageing, University of Newcastle, NSW, Australia

<sup>b</sup> Guest Editor, Issue 3, 2016

<sup>c</sup> Corresponding author: [julie.byles@newcastle.edu.au](mailto:julie.byles@newcastle.edu.au)

---

## Article history

Publication date: July 2016

Citation: Byles J. Making innovative use of cohort data. *Public Health Res Pract.* 2016;26(3):e2631627.

doi: <http://dx.doi.org/10.17061/phrp2631627>

Cohort studies have long been used to study incidence, causality and prognosis. They have the advantage of including time as the critical factor for knowing the rate of an event and the pace of change, and for temporal sequences in understanding causality. In this issue of *Public Health Research & Practice*, we look at innovative use of cohort data, with examples of how long-running studies have evolved to address emerging public health issues, how new types of data can be added to cohort studies to enrich their value, and how cohort studies can be an essential component of the health system infrastructure.

The Nurses' Health Study is a standout example of a large and long-running study that has evolved its purpose over time. The US study commenced in 1976, with very specific research questions about risk factors for cancer. [Colditz](#) describes how the study has now answered questions on causality for a broad range of women's health issues, and in response to emerging public health concerns. Adding new questions meant adding new measures, including the collection of biological data, and extending outcomes to encompass not only incident events, but also quality of life. The study has also added to the cohorts by recruiting the children and mothers of the original participants.

[Mountain and colleagues](#) show how adding linked data to the cohort from the Western Australian Pregnancy Cohort (Raine) Study can increase the scope and value of the original study. Including local and national health and welfare datasets, genealogical links, and spatial references allows for assessment of exposures and outcomes at ecological and individual levels, including educational and developmental outcomes, as well as data on health and healthcare.

[Vanhouette and Nazroo](#) demonstrate how add-on data can be collected retrospectively using life-history methods, as used in the English Longitudinal Study of Ageing. Life-history data provide detailed temporal information on exposures, including duration, timing and sequence. These additional exposure dimensions are essential for lifecourse studies that test 'critical period' and 'accumulation' models of the mechanism and impact of earlier life exposures.

[Tavener and colleagues](#) show how qualitative data can be included in cohort studies to provide biographical, attitudinal and experiential information. These data are as important to sociological epistemology as blood might be to biological analysis. The syntax of the comments may also provide a

quantitative index of functioning, such as propositional density (a measure of how much information is conveyed in an utterance or text), which could be linked to cognitive performance and other functional outcomes.

The Sax Institute's 45 and Up Study is one of the largest studies featured in this series, covering all of New South Wales (NSW) and involving about 1 in 10 people aged 45 years and over. The size and coverage of this study make it an ideal platform for evaluating health service innovations. [Comino and colleagues](#) provide two examples of how the 45 and Up Study data, linked to Medicare and hospital data, can be used to evaluate the use and effectiveness of health services, and how this can be used to frame and inform healthcare innovation.

The SEARCH study (Study of Environment on Aboriginal Resilience and Child Health) also demonstrates how a cohort study can be used to increase healthcare responsiveness and effectiveness. The study is an exemplar of how participants can be partners in research, and how research can be part of a virtuous cycle for improving health. [Wright and colleagues](#) describe how SEARCH has been used by the community and health services to set priorities, motivate intersectoral engagement, focus resources and create mechanisms for real improvements in healthcare. In turn, the study includes an in-built mechanism for evaluating the impact and ongoing value of these actions. SEARCH is a tremendous example of how research can be used to benefit people's health, rather than just to study people's health.

In other contributions, [Norton and colleagues](#) discuss an opportunity to establish public health surveillance of intensive care services in NSW, an essential element of preparedness for severe disease outbreaks and pandemics. In a research article, [Weiland and colleagues](#) find that smoking is more prevalent among emergency department (ED) patients than the general population, suggesting EDs may be a prime setting to employ quit-smoking interventions. And finally, [Wutzke and colleagues](#) examine views from senior health department personnel, public health advocates and thought leaders on the value of systems thinking and its methods, particularly for chronic disease prevention in Australia.

Thank you to all our readers for your support since *Public Health Research & Practice* launched in November 2014. We aim to deliver engaging, high-quality, peer-reviewed articles from Australian and international thought leaders, policy makers, practitioners and researchers that will inspire, provoke debate and be useful in your work. Please encourage your colleagues to submit articles, subscribe to our quarterly email and follow us on Twitter (@phrpjournal). We invite you to submit manuscripts via our website, make suggestions about themes or topics, and send us your feedback.

## Competing interests

JB is a member of the Sax Institute Board.

Copyright: 

© 2016 Byles. This article is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Licence, which allows others to redistribute, adapt and share this work non-commercially provided they attribute the work and any adapted version of it is distributed under the same Creative Commons licence terms. See: [www.creativecommons.org/licenses/by-nc-sa/4.0/](http://www.creativecommons.org/licenses/by-nc-sa/4.0/)