🎓Research excellence, knowledge exchange and policy development

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Introduction

Research evidence can be a powerful tool for effecting change and assisting necessary reform in order to overcome outstanding problems. At the same time, hefty research reports can also completely miss the mark and be used as doorstops. This paper explores how we—as researchers, service providers, policymakers and health service planners—can maximise benefits to the population and to health outcomes through the process of knowledge exchange (KE). Knowledge exchange is defined as "collaborative problem-solving between researchers and decision-makers that happens through linkage and exchange".[1] Why does an idea's time come when it does? How can high quality research make a difference in the real world?

The science of KE is relatively young. It still relies heavily on anecdote and case study.[2] This paper draws on the work of the Centre of Research Excellence in Rural and Remote Primary Health Care (CRERRPHC) to examine the key features of an effective knowledge exchange process. The term 'knowledge exchange' is used intentionally in order to highlight the importance of the interaction between knowledge producer and end-user.

The policy process

Firstly, to influence policy an understanding about how policy is made is useful. Policy is 'a set of principles guiding action towards predetermined ends'.[3] There are different conceptualisations of the policy process. One example is the very rational and linear exposition depicted in Figure 1.[4]

Figure 1   The policy cycle after Bridgeman & Davis (2003)
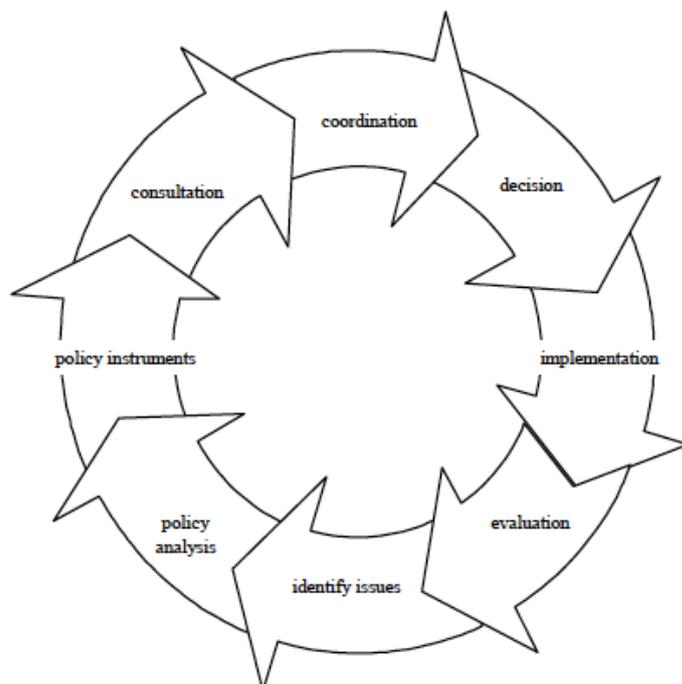
However, the policy process is generally more complex and messier than this. Policymakers may value research evidence, but scientific evidence may be one of a number of information sources. These may include the competing views of different stakeholder groups, anecdotal evidence, and public and media response to events.[5] Politicians also hold values and philosophies which underpin and drive decision-making and they may justifiably "balance a number of interests in forming

policies".[6] Time is also at a premium in the rapid political cycle, and timing can be crucial. Sometimes policy is decided and then the supporting evidence is found.

These values, considerations and other competing sources of information may drive policy, which then, through frequent repetition, become "the evidence" or acknowledged to be "common wisdom". In such circumstances, we may ask is it evidence informed policy or "policy-based evidence"?[6, 7]

A practical way of thinking about the policy process is Kingdon's triad of policy, problem and politics.[8] Kingdon has analysed and written about policy development, including health policy, based on detailed observations of the political process in the United States. His conceptual framework is both appealing and useful. The policy process may be complex, but it is amenable to analysis. Kingdon describes three separate, independent but interacting streams of *Problem, Policy and Politics*. When a recognised problem coincides with an effective policy solution and the politics are right, this alignment of the three streams opens the 'policy window'. In reality, however, these three streams are not often easily aligned.

The Centre of Research Excellence in Rural and Remote Primary Health Care

The Centre of Research Excellence in Rural and Remote Primary Health Care (CRERRPHC) is funded by the Australian Government though the Australian Primary Health Care Research Institute for the specific purpose of implementing policy-relevant research, with a particular focus on knowledge exchange (see https://www.crerrphc.org.au). It entails a national, multi-site collaboration between the Monash School of Rural Health, the Centre for Remote Health (Flinders and Charles Darwin Universities) and the University of Sydney Department of Rural Health, as well as the Northern Territory Department of Health.

The research activity of the CRERRPHC focuses on complex access and equity problems in remote and rural Australia:

- Stream 1 research has developed an appropriate measure of access to primary health care (PHC) services to inform national PHC workforce and service planning.

- Stream 2 research has identified what 'core PHC services' rural and remote Australians should reasonably expect to access, and is currently collecting primary data from high-performing PHC services operating in different rural and remote contexts in order to develop 'benchmarks' for human and physical resources in settlements of different size and location.

- Stream 3 research has evaluated different PHC services that seek to minimise barriers (such as distance and affordability) and maximise access to optimal care in different contexts, particularly focussing on aged care, mental and Indigenous health.

The CRERRPHC has a strong focus on knowledge exchange and has used multiple strategies to that end. These include peer-reviewed publications, conference presentations, health service seminars, policy roundtables, parliamentary enquiry submissions, one-on-one meetings with senior policy-makers and a National Advisory Committee of key stakeholders and end users. The CRERRRPHC also has a strong interest in the impact of its research, and as a result has developed a research impact framework and database to monitor and evaluate the impact of its work.

The research impact framework is soundly based on existing literature pertaining to knowledge exchange.[9] The framework, as summarised in Figure 2, allows us to describe knowledge exchange activity and its impact on generating new knowledge, impact on policy, on services and on society more broadly. Each of these potential areas of impact has different audiences. The evidence is either generated by the CRERRPHC ("producer push") or end-user-driven ("user pull").

Figure 2   CRERRPHC Knowledge Exchange Impact Framework

Broad area of impact	Specific areas of impact	Key audience Stakeholders	Evidence	
			Producer push	User pull
Research-related impact 'Advancing Knowledge'	➢ New knowledge ➢ Capacity building	➢ Researchers ➢ Educators ➢ Media	➢ Publications ➢ Media releases ➢ Grants ➢ PhDs	➢ Access hits & citations ➢ Media interviews ➢ Secondary circulation
Policy impact 'Informing decision making'	➢ Evidence base ➢ Influence in decision-making	➢ Policy makers ➢ Politicians ➢ Professional bodies	➢ Policy briefs ➢ Presentations	➢ Rapid responses ➢ Decision maker awareness & use ➢ Invited policy papers
Service impact 'Improving health & health systems'	➢ Evidence-based practice ➢ Quality & safety ➢ Efficiency ➢ Cost effectiveness	➢ Managers ➢ Health workforce ➢ Consumers	➢ Evaluation reports ➢ Practice guidelines ➢ Recommended models	➢ Decision maker awareness & use ➢ Board membership
Societal impact 'Creating broad social & economic benefit'	➢ Health literacy ➢ Health behaviour ➢ Health status	➢ Consumers ➢ advocates	➢ Media releases ➢ Evidence of changes	➢ Website hits ➢ Media coverage ➢ Consumer surveys

This framework has been implemented through the development of an Access database that allows us to record and monitor multiple outputs including journal articles, books and book chapters, conference and stakeholder presentations, media exposure, evidence of uptake or use of the project's research. This database development, (led by the CRERRPHC manager, Lisa Lavey, and Chief Investigator Dr Matthew McGrail), has generated strong national and international interest.

Why has there been such a high level of interest? The database is scientifically rigorous, based on current literature and encapsulates our understanding of KE. It has been tested through the life of the CRERRPHC. In addition, it meets a recognised need to monitor and evaluate the impact of policy-related research. The database is also freely available under licence to researchers.

Evidence into policy—a case study

The database allows us to collect more detailed case studies of research impact. One such case study relates to the problem of how to distribute incentives for rural and remote medical practitioners equitably. For many years, rural doctors, especially through the Rural Doctors Association of Australia, have highlighted the failings of the current Australian Standard Geographical Classification Remoteness Areas (ASGC-RA) system as the basis for the allocation of retention incentives.[10]

There are numerous anomalies which highlight the inequity of existing arrangements. One example relates to the town of Ingham. Ingham is a small country town of some 5,000 people, located 110km north of Townsville and 220km south of Cairns, and services a shire population of approximately 13,500 . Under the existing ASGC-RA scheme, it is categorised as RA3 Outer Regional, the same as Cairns, Townsville & Darwin, substantial cities with population between 120,000 and 200,000 people. The reason for these anomalies is because the ASGC-RA classification is not fit-for-purpose in determining the equitable allocation of retention incentives to rural and remote doctors.

Led by Chief Investigators Matthew McGrail and John Humphreys, the CRERRPHC developed a new taxonomy based on what doctors do and the context in which they do it. Six key indicators were used to measure the key factors that impact upon length of stay in rural and remote medical practice. 'After-hours/24 hour on-call' is one of the biggest barriers to retention within the primary health care setting. Other professional factors that affect workforce distribution and length-of-stay include total hours worked, type of procedures, on-call arrangements and ability to have time off. Non-professional factors include opportunities for spouse support and employment, and schooling arrangements. Data collected from the Medicine in Australia: Balancing Employment and Life Study (MABEL)[11] were used to demonstrate that while geographical remoteness was statistically associated with all six indicators, population size, (used in conjunction with geographical location), provided a more sensitive measure in directing where recruitment and retention incentives should be provided.[12] Based on these indicators, an alternative and improved 6-category typology—the Monash Model—was developed:

- RA1 (usually ineligible for most programs)
- RA 2–3 & populations >50,000
- RA 2–4 & populations 15,000 to 49,999
- RA 2–4 & populations 5,000 to 14,999
- RA 2–3 & populations <5,000
- RA 4–5 & populations <5,000

The subsequent knowledge exchange process entailed a multi-faceted three year effort that included multiple presentations at conferences, to government and professional organisations; a submission and presentation to the Senate Community Affairs Committee Inquiry into the Factors Affecting the Supply of Health Services and Medical Professionals in Rural Areas[13]; and multiple meetings with individuals, both government and rural doctors. Importantly, too, the Monash Model was considered in detail by an independent government-appointed audit.[14] In addition, a Rural Classification System Working Group was established by the Australian Government Department of Health (DOH) in 2012 to consider these issues. This working group included:

- Rural Doctors Association of Australia (RDAA)
- National Rural Health Alliance (NRHA)
- Australian Medical Association (AMA)
- Royal Australian College of General Practitioners (RACGP)
- Rural Health Workforce Australia (RHWA)
- General Practice Registrars Australia (GPRA)
- Australian Medicare Local Alliance (AML Alliance)
- Rural Health Research—Monash University School of Rural Health CRE Chief Investigators.

The working group focused on the Monash Model. There was a significant amount of validation of this model within the DOH as a tool for retention grant allocation. The meetings of the working group entailed a lengthy and complex knowledge exchange process involving the researchers, professional group representatives and departmental staff. There was an agreed common problem. A number of participants had long and well established relationships, and therefore a degree of trust. The researchers were respected in the rural health sector. As a result of these activities, both technical feasibility and consensus on value acceptability were reached and the DOH and working group agreed on a "Modified Monash Model". This model still uses settlement town size as the key classification determinant, as does the original Monash typology, but further includes the different health service issues caused by remoteness, leaving the classifications for RAs 4 (Remote) and 5 (Very Remote) unchanged.

The seven Modified Monash Model categories are:

- RA1;
- RA2 and RA3 with population > 50,000;
- RA2 and RA3 with population 15,000 to 50,000;
- RA2 and RA3 with population 5,000 to 15,000;
- RA2 and RA3 with population < 5,000;
- RA4;
- RA5.

The responsible Minister (Fiona Nash) formed an Independent Expert Committee (comprising the past-Presidents of the AMA and RDAA, and Chief Investigator Humphreys) to make

recommendations relating to the implementation of the Rural Retention Grant program on the basis of the new classification. At the time of writing, the recommendations of this committee are being considered by the Australian Government.

Discussion

The process by which research evidence becomes instrumental in policy development and program implementation is complex and time-consuming. It is also complicated by the difficulty of separating out the notion of "contribution" to policy as opposed to "attribution"! That is, policy development may draw on relevant evidence from a number of sources, such that it is often impossible to say which research was most influential in determining the policy outcome. So, what can we learn from this successful Australian case study about the facilitators of knowledge exchange?

Ensure rigorous evidence

The development of the research impact database and the underlying empirical data underpinning the Monash Model ensured a sound and credible evidence base. The lengthy validation process undertaken by both staff from the DOH and rural stakeholder groups affirmed this. The agreed problem necessitated a fit-for-purpose quantitative response, and the rigorous methodology used to analyse the problem and which generated the proposed policy contributed to the successful outcome.

Credibility of the researchers

Credibility and the trust engendered in end users are critical KE facilitators.[15] The researchers involved were experienced and well respected because of their long-standing commitment to research designed to bring about improvements in rural and remote health outcomes. . They possessed the requisite research skills as well as a deep understanding of the subject and the context. They are also part of a credible larger research collaboration in the CRERRPHC. Importantly too, the researchers had worked over a long period in close partnership with Australian Governments of all persuasions, focusing solely on the need to ensure that whatever rural and remote health policies were adopted, they resulted in fair and equitable outcomes for the health workforce and rural communities.

Researcher-end user relationships

The importance of relationships, personal contact and rapport are recognised consistently as key facilitators in KE.[2, 16, 17] Both formal and informal mechanisms of exchanging information and informing policymakers and health planners were utilised. These included the CRERRPHC National Advisory Committee, APHCRI Department of Health seminars and Chatham House policy roundtables, as well as less formal regular meetings with key individuals. Importantly, the message was actionable and customised to the key audience.[15]

Multiple modes of communication

Just as there are different audiences, there are different modes of communication ranging from peer-reviewed publications and parliamentary enquiry submissions through to Twitter and website highlights (https://www.crerrphc.org.au). For this reason, the research knowledge that was disseminated was necessarily re-configured through different media in order to demystify what is often seen as language designed to meet largely academic publication imperatives rather than the needs of lay and other audiences.

Validation and amplification

Not only is it important to state the message often, but for different voices to repeat the same message. In this instance the RDAA had identified the problem and advocated for the adoption of the Monash Model. Successful KE is facilitated by professional organisations, peak groups and advocacy organisations reviewing, endorsing and promoting relevant research findings. The National Rural Health Alliance is an outstanding exemplar of utilising others' research and generating its own scholarly research that is used in its advocacy efforts.

These end-users—advocates and implementers—will test the rigour of the research; the feasibility of implementing research findings, and its potential impact. For governments in particular, as well as professional organisations, assessing the impact entails working out the winners and losers in any

change process. Sensitivity to the politics is important. Is it consistent with current values? These may vary widely from a small government, privatisation agenda to a social justice, equity-focused culture. The good policy entrepreneur and the effective researcher need to be sensitively tuned but not a slave to the prevailing culture and attendant language. At the same time, policy take-up is often very dependent on the outcomes of extensive political and economic risk analyses conducted by both government and stakeholder organisations.

Serendipity

There is little written about serendipity—the unpredicted positive results of timing and circumstance. In this instance the problem, policy and politics came together to open the policy window, thus translating solid research into policy reform, which highlights the value of Kingdon's triad approach outlined above.

Persistence

Persistence is the sibling of serendipity. Persistence in getting the message across is key. In terms of Kingdon's conceptualisation, it is about having a ready solution, waiting for the politics to be right and the problem to present. Other authors have also referred to the "sleeper effect" and waiting for the timing to be right.[18]

Conclusion

This case study highlights the complexity of the KE process and the idiosyncratic way in which many policies come into being—something that is well-known to bureaucrats and other "insiders". Nonetheless, this particular case study reflects well many of the key attributes of successful KE. Credible researchers from a credible research centre took the opportunities afforded by a parliamentary enquiry to address a policy problem identified by rural doctors, and used sound research evidence to effect change in a timely manner. This was the result of persistent work over many years. Indeed, the stamina required often reflects 'the loneliness of the long-distance runner'! The research outcomes and their applicability were validated and used by several interested groups, thus amplifying its import and relevance. These are important attributes for researchers and the potential users of research findings. Strengthening relationships and trust between primary care network staff, bureaucrats, elected representatives and researchers will make evidence-informed decisions more likely. Finally, the use of health services research in policymaking may be further enhanced by a government culture that nurtures an interest in and the value of research.

References

1.   Canadian Foundation for Healthcare Improvement http://www.cfhi-fcass.ca/PublicationsAndResources/ResourcesAndTools/GlossaryKnowledgeExchange.aspx accessed 19.03.2105.

2.   Mitton C, Adair CE, McKenzie E, Patten SB, Perry BW (2007) Knowledge Transfer and Exchange: Review and Synthesis of the Literature. Milbank Q 85(4):729-68.

3.   Titmus in Baum F (2002) The New Public Health (2nd Edition). Melbourne: Oxford University Press (p 365).

4.   Bridgman P & Davis G (2003) What use s a policy cycle? Plenty if the aim is clear. Aust J of PublAdmin 62(3): 98-102.

5.   Waddell C, Lavis J, Abelson J, Lomas J, Shepherd C, Bird-Gayson T, Giacomini M, Offord D. (2005) Research Use in Children's Mental Health Policy in Canada: Maintaining Vigilance amid Ambiguity. Soc Sci Med 61:1649–57.

6.   Marmot MG (2004) Evidence based policy or policy based evidence? Willingness to take action influences the view of the evidence—look at alcohol. BMJ 17; 328(7445): 906–907.

7.   Coory MD (2004) Ageing and healthcare costs in Australia: a case of policy-based evidence? MJA 180: 581–583.

8.   Kingdon JW (2011) *Agendas, Alternatives, and Public Policies* (Updated 2nd edition) Boston: Longman.

9.   Buykx P, Humphreys JS, Wakerman J, Perkins D, Lyle D, McGrail M & Kinsman L (2012). 'Making evidence count'—A framework to monitor the impact of health services research. Aust J Rural Health 20: 51-58.

10.   Australian Institute of Health and Welfare (2004) *Rural, regional and remote health: a guide to remoteness classifications.* AIHW cat. no. PHE 53. Canberra: AIHW.

11.   Medicine in Australia: Balancing Employment and Life (MABEL) https://mabel.org.au/ accessed 27.04.15

12.   Humphreys JS, McGrail M, Joyce C, Scott A & Kalb G (2012) Who should receive recruitment and retention incentives? Improving targeting or rural doctors using medical workforce data. Aust J Rural Health 20: 3-10.

13.   Senate Community Affairs Reference Committee (2012) The factors affecting the supply of health services and medical professionals in rural areas. Australian Parliament: Canberra. http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Community_Affairs/Completed_inquiries/2010-13/rurhlth/report/~/media/wopapub/senate/committee/clac_ctte/completed_inquiries/2010-13/rur_hlth/report/report.ashx accessed 19.03.2015.

14.   Mason J (2013) *Review of Australian Government Health Workforce Programs.* Canberra: Department of Health. http://www.health.gov.au/internet/main/publishing.nsf/Content/D26858F4B68834EACA257BF0001A8DDC/$File/Review%20of%20Health%20Workforce%20programs.pdf accessed 19.03.2015.

15.   Lavis J, Robertson J, Woodside C, McLeod C, Abelson J. (2003) How Can Research Organizations More Effectively Transfer Research Knowledge to Decision Makers? Milbank Q 81:221–48.

16.   Bowen S, Martens P. Manitoba Need to Know Team (2005) Demystifying Knowledge Translation: Learning from the Community. J Health Serv Res Policy 10(4):203–11.

17.   Innvaer S, Vist G, Trommold M, Oxman A. (2002) Health Policy Makers' Perceptions of Their Use of Evidence: A Systematic Review. J Health Serv Res Policy 7:239–44.

18.   Whitehead M, Petticrew M, Graham H, Macintyre S, Bambra C, Egan M. (2004) Evidence for Public Health Policy on Inequalities: 2: Assembling the Evidence Jigsaw. J Epidemiol Community Health 58:817–21.

Presenter

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