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Primary Health Care

Overcoming access and equity problems relating to primary health care services in rural and remote Australia

Centre of Research Excellence in Rural and Remote Primary Health Care

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February 2016

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Medicine, Nursing and Health Sciences



Broken Hill University
Department of Rural Health



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ACKNOWLEDGEMENTS

This research is a project of the Australian Primary Health Care Research Institute, which is supported by a grant from the Australian Government Department of Health. The information and opinions contained in it do not necessarily reflect the views or policy of the Australian Primary Health Care Research Institute or the Australian Government Department of Health.

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We are grateful for the assistance of the many rural and remote health stakeholders who participated in this research through providing data, advice and material relevant to this research. In particular, the research team would like to acknowledge:

- The Australian Primary Health Care Research Institute for funding this study. Particular thanks go to its Directors, Robert Wells and Terry Findlay, and their staff, especially Rebecca Pallavicini, Chilandu Mukuka, Kimberley Brady, Marion Eluga, Peter McInnes, Kerri Kellett and Dagmar Ceramidas.
- The members of our National Advisory Committee for their active and enthusiastic participation – Lou Andreatta, Mark Booth, Margaret Brown, Ian Cameron, Adam Catchpole, Linda Cutler, Nicholas Duell, Kirsty Faichney, Vicki Gordon, Gordon Gregory, Anthony Hobbs, James Lyons, Chips Mackinolty, Lisa McGlynn, Meredith Taylor, Robert Wells and Mark Wenitong.
- State and Territory Health Authorities - who provided advice and material relevant to this project, especially the Northern Territory Department of Health, Health Gains Planning Branch.
- Rural Workforce Agencies - who provided access to data relevant to this project, especially Ian Cameron and Peter Williams (NSW).

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LIST OF ACRONYMS

ABS	Australian Bureau of Statistics
ACCHS	Aboriginal Community Controlled Health Services
AIHW	Australian Institute of Health and Welfare
AMSANT	Aboriginal Medical Services Alliance of the Northern Territory
APHCRI	Australian Primary Health Care Research Institute
ARC	Australian Research Council
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australia Standard Geographical Classification
CHS	Community Health Services
CIs	Chief Investigators
CRE	Centre of Research Excellence
CRERRPHC	Centre of Research Excellence in Rural and Remote Primary Health Care
CRH	Centre for Remote Health
DoH	Department of Health
GIS	Geographical information system
HCRRA	Health Consumers of Rural and Remote Australia Inc.
HR	Human Resources
IFA	Improvement Foundation Australia
IM/IT	Information management information technology
LOS	Length of service
MPS	Multi-Purpose Health Services
NAC	National Advisory Committee
NMDS	National minimum data set
PC	Primary Care
PHC	Primary health care
PHCRED	Primary Health Care Research Evaluation and Development
RRMA	Rural, Remote and Metropolitan Areas classification

CONTENTS

Section 1 – Introduction	1
Background.....	1
Aims of the CRERRPHC	2
Stream 1: the geography of access	2
Stream 2: the impact of rural and remote context on primary health care practice.....	2
Stream 3: evaluating sustainable PHC service models.....	2
Conceptual basis and rationale	3
Section 2 – Methods	1
Organisational arrangements for the CRERRPHC	1
Governance, leadership and management.....	1
Academic leadership	2
Project Manager	2
Chief investigator meetings	3
Research Stream meetings	3
Linkage with end-users	3
Role of the Advisory Committee	4
Governments and bureaucrats	4
APHCRI	4
Health services, professional organisations and consumers.....	4
Academic research and knowledge generation methods.....	4
Stream 1	5
Stream 2	5
Stream 3	6
Capacity building	6
Internal – ‘Growing PhD and Post-Doctoral Researchers’	7
External – ‘Building research skills of rural health practitioners’.....	7
Knowledge transfer	7
Dissemination of research outcomes – Website and Newsletters.....	7
Tracking knowledge impact and uptake.....	8
Knowledge translation strategies	8
Section 3 – Results	9
Knowledge generation.....	9
Stream 1: the geography of access and equity	9
Stream 2: Benchmarking the impact of rural and remote context on primary care practice	11
Stream 3: Primary health care models.....	12
Capacity building	15
Internal program	15
External program.....	15
Knowledge transfer	16
Research dissemination – Newsletters and Website	16
Conceptualising a research impact framework	17
Constructing an impact monitoring database.....	17
Case-study of research into policy – The ‘Modified Monash Model’:.....	18

Section 4 – Discussion and policy implications	20
Policy implications – Research Streams.....	20
Stream 1	20
Stream 2	20
Stream 3	21
Policy implications – Research capacity building.....	21
Section 5 – Conclusion.....	23
Appendices	24
APPENDIX 1 –References.....	24
APPENDIX 2: National Advisory Group – Terms of Reference and membership	26
APPENDIX 3: List of stakeholder meetings and presentations, including Reference Group and round-tables	28
APPENDIX 4: Evaluation feedback from presentations.....	31
APPENDIX 5: Final survey – Health Care Access.....	34
APPENDIX 6: Benchmarking survey instrument.....	38
APPENDIX 7: List of conference presentations.....	41
APPENDIX 8: List of peer-reviewed And Other publications	46
APPENDIX 9: Website details and frontispiece	52
APPENDIX 10: Newsletters	53
APPENDIX 11: Summary Report: Evaluation of the CRERRPHC's new national Index of Access in Australia.....	56
APPENDIX 12: 12-page response paper by Rural Health Workforce Australia and the seven state and territory workforce agencies.....	60

Section 1 – Introduction

BACKGROUND

Nowhere is the problem of access to health services greater than in rural and remote areas.¹ “Lack of access to quality healthcare providers is one of the primary root causes of health inequity and is disproportionately experienced by people living in remote and rural communities”.² While poor access and social inequity are not confined to non-metropolitan areas, for geographically large countries such as Australia and Canada, this problem translates into major inequities in resource distribution and service provision in rural and remote areas, with consequent unacceptable inequalities in the health and well-being of their populations.^{3,4} For example, rural and remote Australians have poorer health outcomes, die sooner than people living in urban areas, and Medicare has a \$1 billion underspend on people in rural and remote areas. Not only are problems of access to services at the heart of health outcome inequalities and inequities, but importantly they have persisted over time,^{5,6} and remain the single biggest impediment to improving the health outcomes of geographically disadvantaged groups of the population.⁷

The Centre of Research Excellence in Rural and Remote Primary Health Care (CRERRPHC) was launched in 2011 at Parliament House in Canberra by the Honourable Mr Mark Butler, the Minister for Mental Health and Ageing (see Figure 1). The CRERRPHC was established to undertake research on access and equity issues in relation to rural and remote primary health care (PHC). This focus is premised on the following,

- > The inequality of health outcomes between the one-third of Australia's population living in rural and remote regions and their metropolitan counterparts is unacceptable⁸
- > The acute compounding effect of geography on socio-economic disadvantage in rural and remote areas⁹
- > Evidence that effective PHC services diminish problems of workforce recruitment and retention^{10,11}
- > Evidence that PHC services are the most efficient and effective vehicle for improving health outcomes,¹² and
- > A logic model that provides the explanatory associations between health service inputs in specific contexts, service outputs and health outcomes.¹³

The initial CRERRPHC was funded for four years until 31 December 2014, but received a one-year extension of funding through 2015.



Figure 1: Launch of the CRERRPHC 2011 - L to-R: Professor David Lyle (CI), Professor John Humphreys (CI), Hon. Mr Mark Butler (Minster for Mental Health and Ageing), Professor Lesley Barclay (Chair, National Rural Health Alliance) and Mr Gordon Gregory (CEO, National Rural Health Alliance).

AIMS OF THE CRERRPHC

The research program of the CRERRPHC aimed to better understand key access and equity issues relating to the provision of appropriate, effective and high quality primary health care services in rural and remote communities of Australia. The integrated research program comprised three broad streams of research activity.

Stream 1: the geography of access

Arguably, one of the most important aspects of equity and access to PHC services is the location and distance to these vital resources. Stream 1 research aimed first to assess differential access to PHC services and service utilisation on a national level, using sophisticated geo-spatial methodologies; and, secondly, to produce evidence and generate an improved measure of access (the *Index of Access*) to inform national PHC workforce planning and evaluation necessary to ensure citizens have an equal opportunity to be healthy.

During 2015, the CRERRPHC externally validated the *Index of Access* with key stakeholder groups, policymakers, service planners and other experts; outlined its appropriateness and application as a national health service, and workforce planning tool for rural and remote areas; and investigated the relationship between rural and remote population dynamics, service availability and access patterns.

Stream 2: the impact of rural and remote context on primary health care practice

Far from being provided ubiquitously, the availability of PHC in rural and remote areas relates very closely to the context in which services are provided and the nature of activity that PHC workers do. Different models of provision are required to take account of differences in population size and density, location, and needs. Unfortunately, a major gap limiting current health reform initiatives designed to increase equity of access to health care, is lack of knowledge about what mix of PHC services communities of different sizes and locations require (and could reasonably expect) in order to maximise quality health outcomes. Ensuring equity of access requires a good understanding of the service requirements in terms of funding, infrastructure and human resources.

Stream 2 research aimed to collect primary data from high-performing PHC services operating in different rural and remote contexts, to identify indicators and develop 'benchmarks' for key service requirements (such as workforce and funding), and service performance (for example, early intervention, treatment of acute and chronic disease) that can be used to quantify the volume and distribution of available care (that is 'who gets how much of what services').

Extension of this stream in 2015 enabled completion of this work and contributed to an examination of the fly in/fly out workforce in remote communities. The extension also provided ongoing support for three PhD students.

Stream 3: evaluating sustainable PHC service models

Research has shown how a 'one-coat-fits-all' model of health care fails many rural and remote Australians. The aim of Stream 3 research was to evaluate innovative PHC services which fill service gaps, better target health needs and promote rural workforce recruitment. This research aimed to highlight PHC models that 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. Building on previous research, the CRERRPHC sought to apply generic environmental enablers and essential service requirements to differing contexts in order to identify 'what models work best where and why'.^{10,11}

In short, the CRERRPHC research program sought to provide a national platform showing how improved access to appropriate PHC services for populations in locations with poorest access will increase equity in health care through improved health literacy, service utilisation and health outcomes.

In 2015, a comprehensive evaluation and synthesis of studies undertaken in Stream 3 was undertaken.

CONCEPTUAL BASIS AND RATIONALE

Penchansky and Thomas' landmark paper¹⁵ captures the multidimensional concept of accessibility – incorporating availability, accommodation, affordability and acceptability.^{1,14} This concept of accessibility is operationalised within a logic model framework that underpins the CRERRPHC research program (Figure 2). Previous research (shown in stipple) has empirically validated the relevance of this framework through developing (i) a typology of PHC service models appropriate in different rural and remote contexts; (ii) a framework that defines the environmental enablers and essential health service requirements across these different models; and (iii) indicators and benchmarks specifically for workforce retention.^{10-11, 16-19} This research has received national and international acclaim by academics and policymakers through its explanation of the context of, and inputs to, effective and sustainable PHC services.

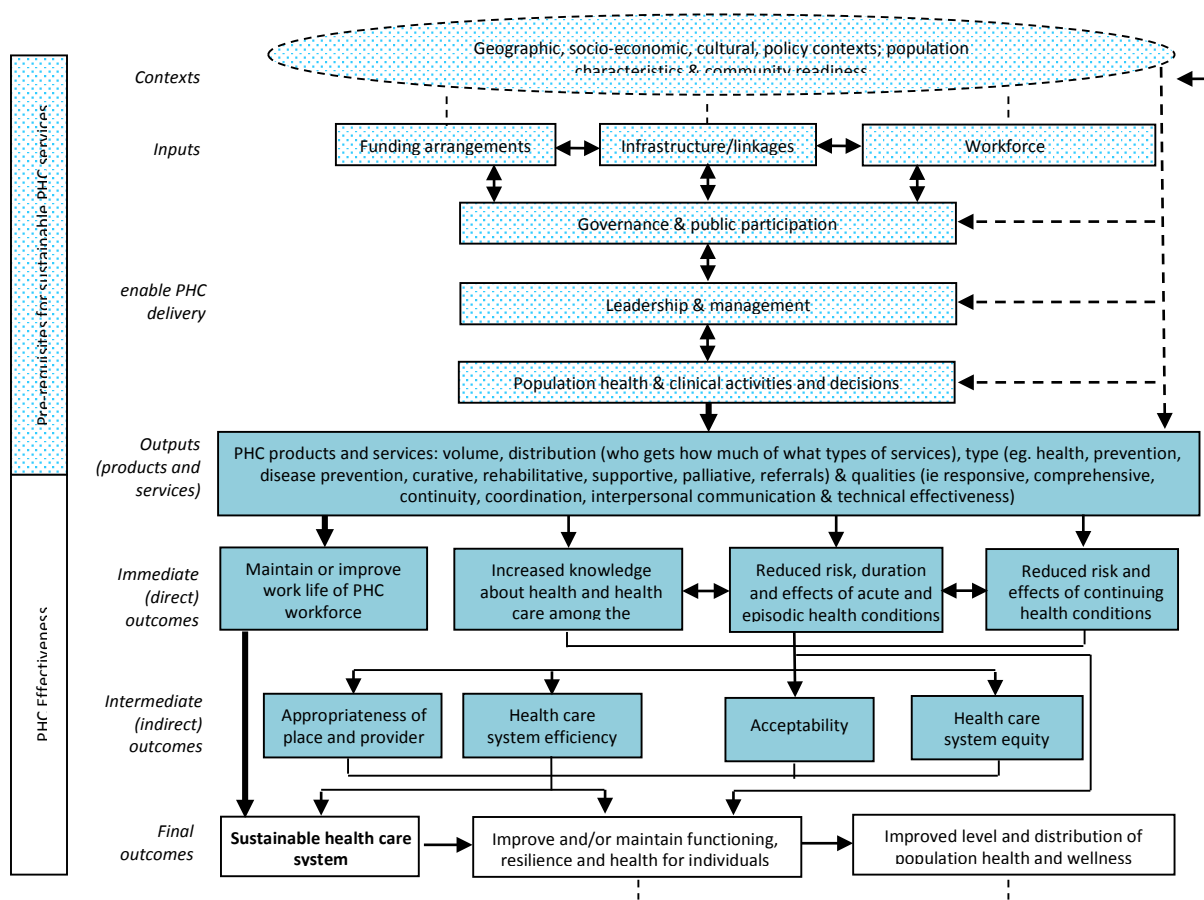


Figure 2: An evidence-based logic model for primary health care for small rural and remote communities (After: Watson et al., 2009.)

The research investigated in detail, how appropriate and sustained PHC service inputs contribute to direct and indirect health outcomes that ensure improved health status for all Australians (see shaded area in Figure 2). The CRERRPHC research helps to generate measures by which to link PHC models with improved efficiency, acceptability and appropriateness of care necessary to ensure sustainable improved health outcomes. Specific studies focused on sustainable models of aged care and mental health service delivery (two of the most important national priority areas relevant to under-served populations), and the role and importance of health knowledge and literacy in improving access to PHC.

The research demonstrates how geographical disadvantage (felt most acutely in rural and remote areas) exacerbates the effects of social determinants on health and organisational problems that contribute to poor health outcomes. Importantly, too, it highlights the urgent and critical need for, and importance of, sentinel measures by which to monitor the impact of improved access to appropriate PHC on health behaviour and health outcomes. Geographic-based indicators and benchmarks are essential for monitoring the provision of PHC services^{13,20} and evaluating national policies designed to provide effective and equitable health care to all Australians regardless of their place of residence.

Section 2 – Methods

The CRERRPHC research program combined Australia's best rural and remote health researchers across four sites with pre-eminent early career researchers, post-doctoral research fellows and PhD students, and international experts from North America. The CRERRPHC comprised staff from departments across four universities (Figure 3),

- > Monash University School of Rural Health in Bendigo
- > Monash University Graduate Medical School, Churchill
- > Centre for Remote Health, a joint Centre of Flinders and Charles Darwin Universities, Alice Springs
- > The Broken Hill University Department of Rural Health (University of Sydney)

Associate investigators from Macquarie University, the Northern Territory Department of Health, and overseas, provided invaluable input to the research program.

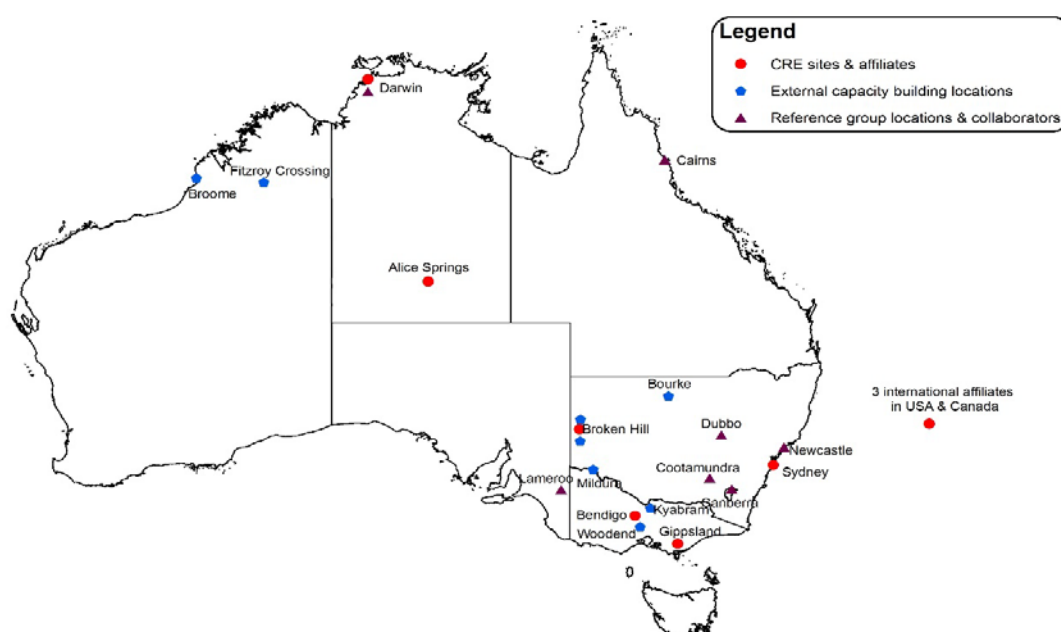


Figure 3: Location of CRERRPHC sites in Australia

ORGANISATIONAL ARRANGEMENTS FOR THE CRERRPHC

Strong leadership, efficient management and administration, minimal bureaucracy, effective and transparent communication, and collaborative decision-making are key to any successful and sustainable organisation. With this in mind, the CRERRPHC spent some time initially in putting into place good governance and management measures, together with strong and efficient organisational arrangements, to complement the strong academic leadership,

Governance, leadership and management

The management of the CRERRPHC was maintained through a Management Committee comprising the Chief Investigators (CIs), and was chaired by CIs Humphreys and Wakerman who took overall responsibility for the effective operations of the CRERRPHC. Face-to-face meetings of CIs were held from the outset to put into place necessary strategic planning and agreements. In addition, to ensure efficient organisational arrangements and that academic programs were on track, annual face-to-face meetings were supplemented by fortnightly meetings of the CIs held by teleconference. These regular meetings and communication

maintained the success of the collaboration and enabled the successful completion of joint projects, as well as training and supervision for research students across institutions. In addition to the central management and operational functioning of the CRERRPHC, individual roles were assigned to CIs in order to ensure the efficient and effective functioning at each of its nodes.

Academic leadership

As with any successful organisation, strong academic leadership was required to ensure that the CRERRPHC met its goals. Individual CIs shouldered this responsibility.

- > CI McGrail and CI Humphreys co-led the Stream 1 'Mapping access to PHC and service utilisation' project
- > CI Wakerman led the Stream 2 'Developing an appropriate PHC evaluation framework for service access and equity' project
- > CI Lyle took responsibility for researcher capacity building activity, particularly with higher research degree students, and co-led the Stream 3 'Developing and evaluating sustainable PHC service models to improve access' project with CI Perkins.

Staff of the Poche Centre for Indigenous Health in Alice Springs (Flinders University) contributed to the research program, but the original intention of the Poche Centre taking leadership of the Indigenous health literacy and health services research was not fully realised for reasons beyond the control of the CRERRPHC.

Fortnightly academic teleconferences were held to review academic progress across the CRERRPHC research program, and these were complemented by annual face-to-face gatherings and presentations. In addition, there were regular teleconferences of individual CIs and researchers at various stages of the projects.



Figure 4: CRERRPHC team - Back (L-R): Melissa Lindeman, Steven Guthridge, David Perkins, Susan Thomas, Mike Jones, Matthew McGrail, Penny Buykx, Marita Chisholm, Sue Kirby, David Lyle, Yuejen Zhao, John Wakerman – Front (L-R): Lisa Lavey, John Humphreys, Deborah Russell, Jessamy Bath, Tim Carey

Project Manager

In addition to the organisational and academic leadership, a key role in any successful research organisation is that provided by the Project Manager. The exceptional performance of Lisa Lavey in fulfilling this role was a critical component of the success of the CRERRPHC. Initially, Lisa Lavey occupied this role half-time, but for the latter three years of the CRERRPHC she assumed the role full-time because of the onerous work-load and diverse nature of its national activities. The task of the project manager included,

- > Organising meetings and conference attendance
- > Interfacing with stakeholders, universities, governments, health authorities and professional bodies
- > Meeting all reporting and contractual requirements
- > Developing and maintaining the CRERRPHC website
- > Establishing and managing the CRERRPHC Twitter page
- > Preparation of the CRERRPHC newsletter and other publicity for the CRERRPHC
- > Developing and maintaining a database for monitoring the impact of the CRERRPHC
- > Finalising and desk-topping all reports and publications
- > Liaising with APHCRI and the broader CRE Network
- > Being responsible for finances and all fiscal reporting, and
- > Managing an extensive range of extraneous duties that evolved during the course of the CRERRPHC.

In addition, the Project Manager, in conjunction with the Project Manager from the Centre for Obesity Management and Prevention Research Excellence in Primary Health Care (COMPaRE-PHC), and the Research Manager at APHCRI, developed a *Tips for New Players* document to assist in the establishment and management of multi-institutional centres of research excellence. This draft document was presented at Australia's 2013 *Primary Health Care Research Conference* and subsequently formed the basis for a \$20,000 grant in 2015 to further develop and validate this important tool. The findings of this study were presented to the CRE Network Meeting in Canberra (April 2015), and the 2015 *Primary Health Care Research Conference* in Adelaide (July 2015). The final document entitled *Establishment and Management of a Multi-Institutional Centre of Research Excellence: Tips for New Players* was presented by Lisa Lavey at the 2015 *Australasian Research Management Society Conference* in Singapore (October 2015) and is available on the APHCRI website <http://aphcri.anu.edu.au/resources/researchers>.

Chief investigator meetings

Chief Investigators met regularly each fortnight by teleconference to discuss all aspects of the performance of the CRERRPHC. This important and, at times, onerous responsibility ensured the efficient functioning of the centre, facilitated and enabled strategic forward planning, and maintained a strong focus on relevant, rigorous and high-quality academic research.

Research Stream meetings

Central to the academic success of the CRERRPHC is the full engagement of all staff, thereby ensuring shared communication and understanding of the requirements of the CRERRPC and strong guidance and supervision of early-career researchers and postgraduate students. To that end, Stream Leaders and all academic staff linked by teleconference each alternate fortnight to report and discuss progress with projects.

LINKAGE WITH END-USERS

With PHC research, the engagement of end users (including health authorities, service providers, policymakers and consumers) is vital to the effective planning, implementation and take-up of outcomes. The CRERRPHC research program incorporated a comprehensive strategy to ensure regular and effective communication and widespread dissemination of its activities so that end-users are aware of, and informed by, the research program, in order to maximise take-up and implementation.

Role of the Advisory Committee

The CRERRPHC established a National Advisory Committee (NAC) made up of key remote, rural and Indigenous policymakers, consumers, service providers and advocacy groups. The National Advisory Committee included representation of key rural groups such as the Health Consumers of Rural and Remote Australia Inc (HCRRA) and peak Indigenous organisations such as the Aboriginal Medical Services Alliance of the Northern Territory (AMSANT). Details of members, terms of reference and meeting dates are shown in Appendix 2. While the composition changed over the five-year period, every attempt was made to ensure widespread organisational and geographic representation.

Governments and bureaucrats

Staff from the CRERRPHC maintained regular contact with policymakers and staff from the Australian Department of Health, both through face-to-face meetings and teleconferences. The CRERRPHC conducted and led several seminars, roundtables and meetings over the five years, details of which are shown in Appendix 3. Evaluation feedback from such meetings showed that these were highly valued and provided a useful avenue for informing staff from across a wide spectrum of government (see Appendix 4).

APHCRI

CIs from the CRERRPHC maintained regular contact with APHCRI, including face-to-face meetings, attendance at CRE network meetings, regular interaction with APHCRI Directors, and in relation to ongoing reporting requirements. Staff from the CRERRPHC were actively engaged with the APHCRI interest group in geo-spatial analysis and spatial epidemiology, participating in forums and as a member of its advisory group.

Health services, professional organisations and consumers

The CRERRPHC approach to PHC research was very much aligned to the principles and processes that underpin the Canadian Institutes of Health Research Citizen Engagement framework.²⁴ To that extent, our team employed processes whereby consumers were engaged as a member of the NAC or reference groups associated with the actual research activity, as in the cases of the Elmore Primary Health Service research or the evaluation studies in Aboriginal communities by Wakeman and his staff.

Research outcomes were always translated in a form suitable to meeting the needs of different audiences, including the mass media (both print and radio); brochures and presentations for diverse lay audiences; in culturally appropriate forms for Indigenous communities and ethnic groups; in 1:3:25 format reports for politicians and bureaucrats; in peer-reviewed publications; and in social media and electronic format on our websites and associated links. Staff also presented at numerous conferences and scientific meetings to inform their constituency about the most current evidence relating to rural, remote and Indigenous health services research.

In summary, the CRERRPHC staff maintained excellent and regular interaction with its diverse population of stakeholders, ensuring that good communication channels facilitated dissemination and take-up of the outcomes of the centre.

ACADEMIC RESEARCH AND KNOWLEDGE GENERATION METHODS

The CRERRPHC team brought together extensive research methodological expertise, including sophisticated geographical information system (GIS) and regression modelling, analysis of large data sets, longitudinal survey and program evaluation skills, systematic review skills, health economics expertise, detailed case-study and qualitative expertise, and importantly, the research skills required to work closely with Indigenous communities. Each research stream adopted methods most appropriate to its investigations. All research activities were usually

preceded by an extensive review of the relevant literature to guide the study. In addition, a major 2½ day research methods workshop (together with a comprehensive manual) was held in Adelaide for early-career researchers within the CRERPHC.

Specific methods underpinning the activities of each stream are provided in detail in the publications listed at Appendix 8. In summary, these generally comprised

Stream 1

Wherever possible, researchers drew on existing secondary data available at the national level, and only collected primary data where necessary. A systematic assessment was undertaken of existing (secondary) primary care workforce datasets. Researchers drew on data available at the national level or specific state-level data, but remained limited by the aggregated nature of most secondary datasets. Notable exceptions of usable small-area workforce datasets were Medicare Australia and the Australian Medical Publishing Company (AMPCo), both enabling full-time equivalence data of rural general practitioners at the town or community geographical level. Datasets from state-level Rural Workforce Agencies were additionally used for subprojects relating to rural workforce retention and turnover modelling.

In the absence of any empirical secondary data relating to health service utilisation behaviour of rural residents, primary data were sought. An extensive delivery-and-collection survey of residents from five small rural communities across two states was conducted in order to derive empirical data relating to access behaviour when seeing a doctor for a non-emergency consultation. Differences were analysed between residents of densely-populated and sparsely-populated rural communities, notably of 'distance-decay' (propensity to travel larger distances for health care) and most important access dimensions (when deciding to utilise health care) using multivariate regression models and paired-comparison methods. The survey instrument is shown in Appendix 5.

In developing the *Index of Access*, sophisticated Geographical Information System (GIS) techniques using road network analysis methods within the ArcView software were employed. Floating catchments were then used as the framework for calculating accessibility. Recognising that residents in more sparsely populated areas are prepared to travel further to access healthcare, five catchment size levels were used. Service availability measures used included the volume of general practitioner (GP) services according to the Australian Government's Medicare Benefits Schedule and the Australasian Medical Publishing Company. Resident locations, population size and surrogate variables for health needs were sourced from ABS 2011 census data. A composite health needs measure was calculated using weightings for socio-economic status, Indigenous population percentage counts and age. A full description of the methods underpinning the *Index of Access* is contained in our Discussion Paper and the Geospatial Health journal paper (See Appendix 8: papers 11, 83).

In 2015, the *Index of Access* was validated by key rural health workforce and policy stakeholders targeting expert individuals (see Appendix 12 for the reported outcomes).

Stream 2

The complex nature of the benchmarking research required both qualitative and quantitative methods. First, a systematic review of international peer-reviewed literature was undertaken as the basis for determining what is known about core primary health care services. Building on this evidence, a comprehensive Delphi study comprising experienced rural and remote experts from across Australia was conducted, and the results formed the basis for a face-to-face focus group meeting held in Adelaide.

A complex methodology was used to develop a sample of high performing PHC services in rural and remote Australia for primary data collection. Data for potential primary care practices were accessed with permission through the Improvement Foundation Australia (IFA) based on the Australian Primary Care Collaboratives.²⁵ Staff from the CRE in Primary Health Care Microsystems: researchers at the Greater Green Triangle University Department of Rural

Health, Flinders and Deakin Universities assisted this process. Practice quality scores were based on improvement measures over one year, for type 2 diabetes mellitus and coronary heart disease. Additional data included ABS census data (used to assign a population to the communities where the primary care practice was located), and an ASGC-RA 1-5 rating applied to each community. Eligible practices were sorted according to 12 population groups. Following ethics approval from the Central Australian Human Research Ethics Committee (HREC-12-57), practices from four States and one Territory were approached to participate in the 'benchmarking' study. The survey instrument is shown in Appendix 6. The timing of the data collection was dependent on the availability of practice staff. Face-to-face, on-site visits were conducted by at least two members of the CRERRPHC, and data collected were supplemented by the provision by each practice of additional detailed financial and workforce data.

Whilst remote services approached were willing to participate, logistical, organisational and capacity issues resulted in extended timeframes. Extension of the CRERRPHC was welcome to enable us to complete this fieldwork. Both quantitative and qualitative analyses were employed to examine the data.

Stream 3

Because the range of PHC service models varies greatly across rural and remote areas, a key aspect of the methodology was to review the vast extant literature in order to identify gaps with existing knowledge. A wide range of stakeholders, practitioners, service providers and health organisations from diverse rural and remote areas worked closely with the research team to facilitate both primary and secondary data collection, and the maintenance of these relationships was vital in contributing to the success of the research activity. A range of both qualitative and multivariate quantitative methods were used for data analysis, with specific details provided in each of the peer-reviewed publications listed in the next section.

During the 2015 extension of the CRERRPHC a narrative synthesis was undertaken of key findings from seven PHC service evaluations in rural and remote Australia, in order to better understand how context influences what made these models work, where they worked and why. All the PHC service reforms were successfully implemented to provide access to health care that was previously not available to residents. The analysis involved a shift in focus from delineating key barriers and enablers for effective implementation to consider how those factors interact in real world settings to enable the dissemination of evidence based PHC services and programs. Fifteen papers reporting on seven CRE service evaluations published between 2012 and 2015 were included.

CAPACITY BUILDING

A key goal of the CRERRPHC was building the next generation of rural health researchers. The CRERRPHC research capacity building programs sought both to increase the quantum of experienced post-doctoral researchers ready to lead future research efforts, and also to deliver a cohort of competent researchers who have completed PhDs in rural and remote centres. The CRERRPHC also sought to engage rural health policymakers, service providers and consumers in the research process.

Part of its strategy to achieve this was through providing supervisors and mentors from multiple sites across rural and remote Australia, assisted by using information technology to overcome the isolation of small groups of research students in rural and remote locations. The



Dr Deborah Russell discusses her PhD thesis research with Professor Raymond Pong from Laurentian University Sudbury Canada.

supervision team brought together considerable multi-method expertise in applied epidemiological, bio-statistical and health economics skills (using large data sets and sophisticated econometric modelling); rural health workforce, services and policy; and indigenous health. The extensive research training expertise and experience provided by the CIs was complemented by that of Associate Investigators and international partners.

Two broad strategies were used to build research capacity:

Internal – ‘Growing PhD and Post-Doctoral Researchers’

The CRERRPHC provided PhD scholarships and post-doctoral positions in Bendigo, Alice Springs and Broken Hill, supported by high level research supervision from across institutions. Five PhD students were supported. Post-doctoral researchers were supported to gain CI status on nationally competitive grants, as a means of ensuring future research leadership and sustained PHC research activity in rural areas. These early career researchers were also given significant exposure to the process of knowledge translation through their participation in meetings with high-level policymakers in government.

As part of a strategy to help break down research isolation resulting from the tyranny of distance characterising rural and remote areas, the CRERRPHC made extensive use of interactive technology to maximise research support. Supervisors, mentors, higher-degree students and post-doctoral researchers operating from widely dispersed sites, engaged in several training programs, including journal clubs, virtual methods training workshops, research forums, and seminars on topical health service reform issues and policy debates.

External – ‘Building research skills of rural health practitioners’

The CRERRPHC provided funding support to release staff from PHC services for one day a week for a period of two years. Expressions of interest from rural health practitioners working in all CRERRPHC catchment areas were sought, detailing potential projects, the nature of support from their practice or employer, and their interest and experience in undertaking research. These were reviewed and short-listed, potential candidates interviewed, and nine offers were made.

Following their induction, site supervisors worked closely with these early career researchers to fashion their projects in accord with the aims of the CRERRPHC and to ensure they were feasible. All successful candidates were funded to attend a 2½ day face-to-face methods workshop held in Adelaide early in their program. Regular teleconferences were held between site supervisors and students to discuss problems and as a means to share ideas and discuss their research. Each student selected a research topic relevant to the interests and needs of their practice and community, and was expected to complete a peer-reviewed publication at the conclusion of their ‘internship’.

KNOWLEDGE TRANSFER

Knowledge transfer was an integral part of the CRERRPHC program. To that end, staff from the CRERRPHC adopted a multi-faceted knowledge translation strategy that maximised dissemination of research outcomes and the likelihood of knowledge take-up by effectively engaging and targeting likely end-users.²¹

Dissemination of research outcomes – Website and Newsletters

Effective communication with all stakeholder groups is vital to knowledge translation and the uptake of evidence into policy and practice. Our current knowledge dissemination has national reach to the most remote Australians.²³ Given the diversity of media and the plural nature of its intended audience and interested organisations, the CRERRPHC adopted a broad-ranging dissemination strategy that spanned peer-reviewed publications, conference and workshop presentations, newsletters, media presentations, use of twitter, and a web-site (See Appendices 6, 7, 8 and 9).

Tracking knowledge impact and uptake

The ability of research to influence the PHC sector depends on the quality, relevance and timeliness of the evidence generated, and a robust communication strategy that engages with the diverse stakeholder population. An important aspect of evaluating the research undertaken by the CRERRPHC was ensuring that there existed a comprehensive framework against which its impact could be assessed. A particularly important aspect of this was ascertaining which audiences were being impacted and the nature of the impact. For this reason, CRERRPHC staff invested considerable time in reviewing current literature on knowledge transfer as the basis for developing a fit-for-purpose research impact framework. This resulted in an important publication. See Appendix 8 (Paper 57).

This research impact conceptualisation formed the basis for constructing an impact monitoring database for the purpose of harnessing all measures of the research impact. Led by CRERRPHC Project Manager, Lisa Lavey, together with assistance provided by Dr Matthew McGrail, the database was developed using Microsoft Access to handle complex data. Underpinned by the research impact framework, the impact indicators are organised by who is affected by the research (academics, policymakers, service delivery providers and society at large), and whether the impacts were initiated by the producer or by the user of the research.

Knowledge translation strategies

A key aspect of the CRERRPHC mandate was the translation of knowledge generated into PHC policies and practice. Given that uptake of evidence depends more on factors related to the behaviour of researchers and the receptivity of decision-makers and practitioners than on the attributes of the research itself,²⁴ the CRERRPHC worked closely with leading stakeholders, consumers and policymakers to ensure that the research was based on user needs and accorded with the right predisposition or political and material conditions. Evidence was contextualised within the environment in which it was to be used. Good use was made of the NAC, meetings with APHCRI and the Department of Health, reference groups which included representation of key stakeholders from all State, Territory and national government health departments, key organisations such as the National Rural Health Alliance, Colleges of General Practice and Rural Medicine, Indigenous organisations, nursing and allied health organisations, and consumers.

Part of the CRERRPHC knowledge translation strategy was to help build capacity for uptake by decision-makers. The CIs have been extensively involved with national policymakers and decision-makers through presentations, workshops, meetings and targeted distribution of its publications. Working closely with, and providing evidence directly to, these networks and 'communities of practice' has been shown to be one of the most effective means of knowledge dissemination and take-up.

An additional requirement of the CRERRPHC was to respond to government requests for evidence. The CRERRPHC has built on its existing very strong track record to respond to requests from government and health authorities to provide advice and undertake timely research relevant to their immediate policy needs and imperatives. This was exemplified especially well in the work undertaken by staff from the CRERRPHC in developing an improved classification to overcome existing problems with use of the ASGC-RA scheme to underpin rural and remote programs by the Department of Health. More details on the construction and adoption of the *Modified Monash Model* are outlined in the next section.

Section 3 – Results

KNOWLEDGE GENERATION

The Stream 1 research program was led by Dr Matthew McGrail. What follows is a very brief resume of key outputs, because a significant amount of this activity has already been disseminated in the peer-reviewed literature (see Appendix 8).

Stream 1: the geography of access and equity

Stream 1 has generated important new evidence relating specifically to three vitally important aspects of access and equity,

- (i) *The development of a national Index of Access based on service availability, need for care, and their ability to access services*



Dr Matthew McGrail

Unlike existing measures of access, this index integrates population health needs within its measurement, thereby measuring 'equity of access' and not just rurality or remoteness. Using available secondary data, the *Index of Access* is sensitive to small area differences and longitudinal changes in services, and adaptable for measuring access to PHC services in rural, remote and outer-metropolitan areas. This improved measure of access can be used to inform the optimal delimitation of integrated PHC services into regional networks at different geographical scales (such as Medicare Locals/Primary Health Networks) or changes in access with new services (such as GP Superclinics).

A key publication is noted Appendix 8 (Paper 28).

In 2015, the *Index of Access* was published in a peer-reviewed academic paper, and its development was described in an accompanying technical Discussion Paper. The results of the external validation are contained Appendix 12. In general, there was strong support for the value of the new *Index of Access* and its potential application within rural health service planning and resource allocation decision-making. Key recommendations were,

- > Utilisation of the *Index of Access* is supported by rural health workforce stakeholders and policymakers and should be explored further in 2016
- > The *Index of Access* should be viewed as a health service planning tool to complement current use of the Modified Monash classification
- > The *Index of Access* will be most useful as a decision tool if it is updated annually
- > Data holders should make available their key workforce datasets across the range of primary health care providers in order to improve the value of the *Index of Access*
- > Further research may be required to improve suitability of the *Index of Access* for planning health services in remote areas.

In 2015, an additional paper was developed to demonstrate the importance of how access is measured, describing implications for health service planning. Publications completed during the 2015 extension are noted in Appendix 8 (Papers 4, 11 and 83).

- (ii) *New empirical information of patterns of utilisation of health services*

For purposes of health service planning, it is vital to know the ease with which patients can access an appropriate service at times of need. In a country as large and diverse as Australia, patterns of service utilisation differ. Many factors affect this, but unfortunately there has been a dearth of empirical research to identify how different factors facilitate or impede service use, and how these vary across geography.

Staff from Stream 1 of the CRERRPHC undertook a survey of five small communities varying in geographical location which ascertained their usual behaviour with respect to use of primary care health services and gathered information about the distances they would be prepared to

travel to obtain PHC at times of need. The results gained from these empirical data were vitally important in informing the parameters of the *Index of Access* model, thereby assuring it of greater construct validity. Key publications are noted in Appendix 8 (Papers 12 and 37).

(iii) The development of a 'fit-for-purpose' classification to guide the allocation of workforce incentives

Given the CRERRPHC mandate of being responsive to the needs of government, and recognising the long-standing inequities and problems associated with continued use of the ASGC-RA classification to guide rural and remote incentives programs, staff from the CRERRPHC combined their collective expertise with data from the *Medicine in Australia: Balancing Employment and Life* (MABEL) project (of which Humphreys and McGrail were CIs) to generate a new improved classification scheme which is based on what rural doctors actually do and the differing geographical contexts in which they practice. The outcomes of this research were published in a peer-reviewed journal and received widespread acclaim from government and professional organisations for their practical application (leading to the Modified Monash Model – MMM). The policy significance and process by which it has become applied is outlined in the following Discussion and Policy Option section. A key publication is noted in Appendix 8 (Paper 60).

During 2015, the MMM was first implemented by the Department of Health for rural GP retention incentives policies, with negotiations continuing for its expanded application to other rural workforce programs. Feedback from the *Index of Access* evaluation, and a public seminar run by the National Rural Health Alliance on the MMM, also supported the need for multiple 'fit-for-purpose' classifications, including both the MMM and *Index of Access*.

Case Study: Matthew McGrail and Robert Graham Centre Visiting Fellowship

Dr Matthew McGrail was awarded the 2014 Australian Primary Health Care Research Institute (APHCRI) Robert Graham Center Visiting Fellowship to further investigate how GIS and large datasets can be efficiently and effectively utilised to underpin rural primary health care policies relating to workforce planning and service delivery.



L-R: Andrew Bazemore (RGC Director), Matthew McGrail & Steve Petterson (RGC Research Director).

Matthew's Fellowship enabled him to travel to the Robert Graham Center (RGC) in Washington DC for five weeks in October and November 2014 where he worked with geospatial and health services researchers on two new projects, the first investigating how 'rurality' and other geographical characteristics relate to retention of rural primary care doctors in the USA; and secondly on spatial accessibility outcomes in both Australia and the USA.

In 2015, Matthew developed a new paper evaluating the role of community amenity and other population dynamics on rural and remote patterns of workforce availability (see Appendix 8: Paper 5).

Matthew travelled to the Northern Illinois University, in DeKalb, Illinois, where he discussed the 2-step floating catchment area method with Professor Wei Luo and conducted a one-hour research colloquium to postgraduate students in the Department of Geography. Matthew also visited Dr Don Pathman and Professor Tom Ricketts, both world leaders of rural workforce retention and mobility research, at the Sheps Centre for Health Services Research in North Carolina. He also joined 1,000 attendees from 15 countries at the North American Primary Care Research Group (NAPCRG) Annual Meeting in New York.

Stream 2: Benchmarking the impact of rural and remote context on primary care practice

It has been recognised for some time that “a critical component of monitoring and strengthening the performance of national health systems is the identification of a set of benchmarks and indicators – and the means for their measurement – for monitoring the health workforce.”²⁵ Led by John Wakerman, Stream 2 research staff undertook land-mark research investigating the generation of benchmarks for primary health care services in differing geographical contexts.

The first stage was a comprehensive systematic review of extant (national and international) literature, in order to ascertain what PHC services were considered optimal in order to ensure equitable access to health care in varying communities differing in size and geographical location. The resultant publication was so timely and significant that it achieved ‘highly accessed’ status almost immediately.



Professor John Wakerman

Stage two involved a comprehensive Delphi study of experts from across rural and remote Australia, and defined what core PHC services rural and remote residents should reasonably expect to access. A key aspect of this research was identifying their availability for communities differing in population size and geographical location.

The third stage of the work involved primary data collection from exemplary PHC services stratified by size and geographical location. This extensive fieldwork required the cooperation of selected PHC services in providing detailed workforce, financial and service data relating to their practice. At the end of 2014, this work was still in progress. However, two key messages were emerging from early data,

- > the need for an efficient methodology to collect comprehensively the quantitative data associated with the costs of providing PHC in different settings, and
- > the immense value and insight gained from the qualitative data provided by existing PHC workers about what they actually do in their communities and the support they require to deliver comprehensive PHC.

Key publications are noted in Appendix 8 (Papers 34 and 44).

During 2015 financial, workforce and service delivery data for seven rural and 11 remote PHC centres were collected and analysed to identify potential workforce and funding benchmarks.

Rural practices exhibited wide variability in costs across population groups. Workforce constituted the greatest proportion of expenditure. Several issues emerged that would need to be addressed in order to develop benchmarks, define the scope of services provided and characteristics of the population catchment, categorise service models, and ensure comprehensive collection of cost data. Nonetheless, benchmarks are important if governments are to ensure equity of access to PHC for all Australians regardless of where they live.

Data for remote services show more promising results. The discrete nature of remote health services has offered a more reliable population denominator, while the more consistent nature of remote service types has simplified comparison. Despite lengthy delays to obtain community approval and work through travel logistics, a larger sample was achieved. Early observations include significant correlations between population and per capita costs, workable variances in costs per consult, and a relationship with cost estimations reported in other studies. Work is currently underway to include the cost of visiting services to ensure that estimates include the full cost of remote primary health care. Results will be published in 2016. Key publications with detailed results published or submitted during 2015 are noted in Appendix 8 (Paper 6, 17).

Stream 3: Primary health care models

Research undertaken in Stream 3 specifically targeted improved equity in health outcomes associated with improved access to integrated models of care, especially mental health and aged care. This focus on mental health and aged care, particularly as they apply in Indigenous populations, reflects the importance of these national priority areas for rural and remote communities currently experiencing the most inequitable access to services.

A detailed examination of one innovative model of care for mental health (which built on extensive work investigating rural emergency mental health access utilising telehealth, integrated models of care, and with the Royal Flying Doctor Service and rural GPs) was conducted by staff from the Broken Hill node of the CRERRPHC led by PhD student, Emily Saurman and her supervisors Professor David Lyle and Dr Sue Kirby, with a number of significant publications emerging. These are noted in Appendix 8 (Papers 29, 30, 31 and 32).



Professor David Lyle

Key publications published during 2015 are also noted in Appendix 8 (Papers 9, 16 and 84).

Important research was also undertaken in relation to mental health and aged care, where a key factor in health system reform is to connect health and aged care services for people over the course of their lives. Accordingly, in line with priorities identified by practitioners and consumers in remote areas, this research sought to ensure streamlined, consistent assessment of eligibility for care across all aged care programs, and coordinated service provision with the broader system of care. The significant unmet need associated with access to community and residential care services, particularly for Indigenous populations, people with dementia and other mental health problems, financially disadvantaged people, and people living in remote areas is widely recognised. Importantly, CRERRPHC research also examined the important issue of acceptability of PHC services to Indigenous patients and community participation. Staff from the Alice Springs node of the CRERRPHC, including Professor Tim Carey, Postdoctoral Research Fellow Associate Professor Melissa Lindeman, and PhD student Jessamy Bath led important work in this area.

Key publications are noted in Appendix 8 (Papers 21, 39, 40, 42, 43, 47, 48, 49, 54, 55, 64, 65, 66, 70, 73 and 74).

Further publications published during 2015 are noted in Appendix 8 (Paper 18).

The analysis of studies undertaken in Stream 3 in 2015 generated several key themes associated with improving access and sustainability of primary health care. These included the importance of,

- > Community consultation, engagement and ownership
- > Community capacity to articulate their health needs and negotiate with health services and government agencies, including supporting the development of leadership skills for local community members
- > Funding
- > Collaboration or integration with key health providers including the clarification of roles and responsibilities
- > Establishment of governance and operational procedures
- > Ongoing feedback, monitoring and assessment against performance indicators including the ability to adapt and respond as needed.

Detailed results are contained in a Synthesis paper as noted in Appendix 8 (Paper 3).

Rural area case study 1 – The Elmore Primary Health Service study

The CRERRPHC was awarded further funding from the Commonwealth Department of Health to continue its Elmore Primary Health Service (EPHS) longitudinal study. Working closely in partnership with staff from the EPHS, the project is,

- > Evaluating the performance and sustainability of the service, and
- > Monitoring the quality of care, changes in health outcomes of residents using the service, and the impact of the service on community viability and satisfaction.



Numerous benefits have accrued from this collaboration, including peer-reviewed publications, quality improvement in the service, research capacity building of local rural health professionals, and knowledge translation to many other small rural and remote health services. Testimony to the value of embedding research closely with service delivery was EPHS's success in receiving the 2015 Victorian 'Rural General Practice Award' from more than 120 nominations.

Key publications are noted in Appendix 8 (Papers 33, 36, 56 and 76).

During 2015, this research involved staff from the Elmore Primary Health Service (EPHS) and Monash University in the ongoing audit of clinical data and a qualitative investigation of how the service had been able to expand successfully to nearby towns to provide primary health services across a wider region.

Clinical data collection: An annual audit of clinical data relating to previously identified sentinel indicators was undertaken in 2015. Review of these data indicates that it is time to begin the longitudinal summary of patterns and trends in these indicators. Accordingly, these data are being transferred to a format suitable for analysis within a statistical software package, so that the pattern and trend analysis required for the final report can commence, and the outcomes evaluated.

Service expansion: In 2015 a detailed qualitative analysis of how the Elmore Primary Health Service has expanded to eight nearby rural towns was undertaken. Staff across all sites were interviewed and completed a questionnaire on service expansion.

While community engagement was important throughout, service expansion comprised five broad stages, viz: initiative, consultation, roll-out, evaluation and consolidation, as indicated in the conceptual model included in the resulting article. The full range of previously identified key environmental enablers and essential service requirements were very important for successful expansion, particularly during roll-out and consolidation stages. Individual services benefited from a regionally 'networked' PHC model through the assistance that could be provided to meet essential service requirements in rapidly changing circumstances.



L-R: 2015 Victorian Rural General Practice Award: Dr Adel Asaid (EPHS), State parliamentary secretary for health, Mary-Anne Thomas and Kathy Tuohey (EPHS)

This important study is soon to be published in Open Access format in the academic journal *Rural and Remote Health* so that it is widely available for interested stakeholders (Appendix 8: paper 7).

Capacity building: The data collection and writing up of a short research note highlighting the research capacity building that occurred and its benefits is well under way and will be completed within the allotted time frame.

In summary, this important collaborative research has continued successfully throughout 2015, and generated important results that have been broadly disseminated. As the Elmore Study reaches the end of its funding, preparation of the final report is already in train.



Dr Carole Reeve

Remote area case study 2 – The Fitzroy Crossing study

There is increasing evidence that strengthening primary health care is the key pathway to reducing health inequities in disadvantaged populations. The caveat, however, is that it must be comprehensive and involve community participation to ensure needs are met in a manner that is acceptable to the community. In order to have any long term effects on health outcomes, it must also be sustainable as well as addressing the social determinants of health. An example of these principles in action is the evolution of health services in the Fitzroy Valley in the Kimberley region of northern Western Australia. Led by Carole Reeve, staff from the CRERRPHC have had the privilege of observing and studying their journey over the past few years.

The personal impact of the mortality due to chronic disease and underlying socioeconomic disadvantage was the catalyst for community-initiated changes in health service delivery. Over a 10-year period involving two extensive 18-month-long periods of community consultation, a Community Controlled Health Service was established and a formal partnership with the State Health Service established. The result was a unique partnership enabling a comprehensive approach to primary health care.

The Community Controlled Health Service provides health promotion, environmental health services, and Cultural Guardianship, and has had a significant impact on health in the Fitzroy Valley through alcohol restrictions and addressing the social determinants of health. Through the Partnership, it has also had a significant impact on reorienting health service delivery. The shared vision with the State Health Service to make illness prevention a priority was made possible through the policy changes embodied in the National Health Reform.

The changes in health service delivery resulting from this reorientation included a systematic approach to screening for chronic disease and implementing interdisciplinary care as cases were identified, in addition to dealing with the presenting complaint.

Understanding how this innovative primary health care service evolved, and the factors instrumental in bringing about significant reorientation to a comprehensive primary health care service relevant to the local context, provides important insight into the requirements for effective health service change and sustainability, thereby informing policy and service development for other small disadvantaged communities. This case study highlights what is possible and necessary to deliver appropriate and accessible primary health care in communities seeking to align services with local needs. Publications resulting from this work are noted in Appendix 8 (Paper 15).

In 2015, Dr Carole Reeve completed her PhD by publication. Further publications with detailed results are noted in Appendix 8 (Papers 10, 13 and 15).



L-R: John Wakerman and John Humphreys

CAPACITY BUILDING

Internal program

The CRERRPHC has achieved considerable success in the training and development of early career researchers, a function of close engagement of staff on core research projects within our individual centres. The capacity building program was complex, partly due to the time and resources required to train researchers with different interests from different backgrounds working in different environments, and because of the long time period required to ensure rigorous training appropriate to the needs of the researcher. Nonetheless, considerable success was achieved, as exemplified by the following case-study of one of the five PhD students.

PhD Case study – Deborah Russell

Dr Deborah Russell exemplifies the successful research capacity building undertaken by the CRERRPHC. Deborah undertook important research on the critical issue of PHC workforce retention in rural and remote areas. Her PhD thesis, *The patterns, determinants and measurement of rural and remote primary health care workforce turnover and retention* has provided important new empirical evidence to guide rural health workforce retention policies.

Deborah received her testamur at a graduation ceremony in December 2014, at the Monash University Clayton campus.

Deborah's PhD publications are noted in Appendix 8 (Papers 51, 52, 53, 68, 69 and 75).



Deborah Russell

Noteworthy too has been the extent to which involvement with the CRERRPHC research program has assisted career development of many staff, several of whom have risen to senior academic positions in universities. The promotions include,

- > Matthew McGrail promoted to Senior Research Fellow, Monash University
- > John Wakerman promoted to Associate Dean, Flinders Northern Territory
- > Tim Carey promoted to Professor, Flinders University
- > Melissa Lindeman promoted to Associate Professor, Flinders University
- > Mike Jones promoted to Professor, Macquarie University
- > David Perkins promoted to Professor, University of Newcastle
- > Leigh Kinsman promoted to Professor, University of Tasmania
- > Penny Buykx, Senior Research Fellow, University of Sheffield
- > John Humphreys, Emeritus Professor status, Monash University
- > Susan Thomas, Postdoctoral Research Fellow, University of Newcastle

The 2015 funding provided continued support for two PhD completions (Saurman and Reeve) with a further two due to submit in the near future (Chisholm and Tyrrell).

External program

The comprehensive methodology that was devised to meet the needs of the external early career researchers has already been described. Much credit for the program must be attributed to the diligence, expertise, and commitment of the three supervisors – Dr Sue Kirby, Dr Bernadette Ward and Dr Susan Thomas – who spent countless hours working in close conjunction with their individual students.

In addition, considerable gain was made from conducting group workshops throughout the CRERRPHC program, as exemplified in the following case-study.



L-R: Sue Kirby, Frances Boreland, Debra Jones, David Lyle and Emily Saurman

Research capacity-building case-study

CRERRPHC researchers at the Broken Hill University Department of Rural Health dedicated a week from 15-18 July 2013 to writing up the results of their research for publication in academic journals. With the support and mentoring of Professors David Lyle and John Humphreys, five researchers took the opportunity to progress the completion of draft papers for publication. The week was structured to ensure that each researcher was able to have two one-on-one meetings with a research mentor to

discuss, reflect and critique their draft research article after the introductory meeting.

These meetings were complemented by two presentations. The first focused specifically on research writing for academic journals. The second presentation, attended by a wide audience of local service providers and researchers, discussed the importance of using a systemic evaluation framework to monitor the effectiveness of delivering primary care services to rural communities. Research activity in Broken Hill is clearly well embedded in the health system of the Far West region of NSW.

KNOWLEDGE TRANSFER

The process of knowledge translation is complex, as testified by the vast literature on this topic. In order to ensure that the research undertaken by the CRERRPHC achieved maximum impact and take-up, the team adopted a very strategic approach. Building on its acknowledgement of the need to research issues that were topical and timely for governments, health authorities, rural and remote health services and communities, staff focused on three priority areas,

- > Ensuring that its target audiences were fully conversant with the research being undertaken and the outcomes achieved
- > Monitoring the impact of the research in terms of which audiences were adopting research findings and how they were being accessed, and
- > Carefully translating the research through many avenues in order to ensure that they achieved the maximum likelihood of take-up.

Research dissemination – Newsletters and Website

The CRERRPHC was energetic and vigilant in ensuring that every possible avenue was used for the dissemination of information relating to the research being undertaken. This ranged from maintaining a website, regular newsletters that were circulated in both print form and electronically to key stakeholders, social media, conference and workshop presentations, as well as circulars and media releases for the lay person. Considerable success was achieved through the website, with the added advantage that it was regularly accessed internationally (see Appendix 8). A measure of its impact is that more than 17,000 unique visitors hit the site in excess of 385,000 times. Similarly, feedback from the readership of the CRERRPHC Newsletter (Appendix 9) was extremely positive, with many readers following up with both written and verbal requests for further information. It was clear that the CRERRPHC has managed to capture an extremely comprehensive set of readers and followers. CRE Website

www.crerrphc.org.au

During 2015, the CRERRPHC web site had more than 5,000 additional unique visitors and more than 48,000 total additional visits. This takes the total unique visitors to more than 22,000 and total visits to over 433,000 for the duration of the CRERRPHC.

Conceptualising a research impact framework

In order to formally assess whether the work undertaken by the CRERRPHC has been ‘making a difference’, staff developed a strategic framework for monitoring which target population was most affected by what type of activity, and the form in which this was being impacted – see Appendix 8 (Paper 57).

Indeed, the framework developed has been widely adopted by a diversity of research organisations, some of whom have further modified it for their own purposes. Importantly, this framework formed the basis for developing a database for recording the many ways in which the research activities were impacting on the policies and practices of rural and remote health stakeholders.

Constructing an impact monitoring database



Lisa Lavey

Traditional methods for monitoring research often don’t show the scope of influence and impact of research. To assist the CRERRPHC in monitoring the impact of its research and related activities, staff from the CRERRPHC have developed a database to capture information on all research activities across all institutions including evidence of uptake or use of research. As Figure 4 demonstrates, this database can record a vast amount of detail for an individual, project or program of research. It includes journal articles, books and book chapters, conference and stakeholder presentations, media exposure, evidence of uptake or use of the project’s research, and much more. Research projects can be across multiple institutions or individual institutions.

To maximise the value of this new database as a tool for measuring knowledge transfer and impact, the database template is available free of charge to organisations that need to measure the impact of their work from the CRERRPHC under a license agreement with Monash University. So far, 21 institutions, both nationally and internationally, have begun to use the database under separate license agreements.

Table 1: Summary chart of research impacts

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	> 89 publications > 79 related-publications > 54 Conference presentations > 26 Related conference presentations > 5 media coverage > 17 successful Grants > 5 PhDs > 17 Invited Visitors	> 16 Invited Conference Presentations > 22 Related invited conference presentations > 3 Invited publications > Access hits and citations > 21 Media interviews > 4 Secondary circulation > 21 Awards/promotions

Broad area of impact	Specific areas of impact	Key audience Stakeholders	Evidence	
			Producer push	User pull
Policy impact 'Informing decision making'	> Evidence base > Influence in decision-making	> Policy makers > Politicians > Professional bodies	> 2 policy briefs > 12 stakeholder presentations >	> 5 Policy roundtables > 31 stakeholder presentations > 11 Expert Advice > 2 Rapid responses > 38 Decision maker awareness and use > 7 Invited policy papers > 103 Referee/Reviewer
Service impact 'Improving health and health systems'	> Evidence-based practice > Quality and safety > Efficiency > Cost effectiveness	> Managers > Health workforce > Consumers	> Evaluation reports > Practice guidelines > Recommended models	> 8 Invitations > 10 Decision maker awareness and use > 42 Board membership
Societal impact 'Creating broad social and economic benefit'	> Health literacy > Health behaviour > Health status	> Consumers > Advocates	> 29 media coverage > 4 Media interviews > Evidence of changes	> Website hits (388,948/17,381 unique) > 179 Twitter followers > 238 Tweets > 69 Media coverage > 8 Media enquiries > Consumer surveys > 21 Research Impact Database License Agreements

Case-study of research into policy – The 'Modified Monash Model'

The extent to which research outcomes contribute to policy is often difficult to measure. Few governments or organisations readily 'attribute' success to researchers, seeking rather to draw on their expertise indirectly in order to demonstrate that it is in fact the government or authority that is initiating the innovative policy or practice! Moreover, the process from awareness to take-up is invariably long and complicated, and frequently fraught with obstacles and reasons not to adopt evidence-based outcomes because often their implementation is economically or politically too risky.

Nonetheless, the CRERRPHC has achieved considerable success in initiating research to address a long-standing problem in rural health, identify a feasible solution, and (over a three and one half year period) work with government to assist the adoption of research recommendations into policy. A brief resume follows,

Case-study of knowledge translation into policy

The policy problem

In response to problems of recruitment and retention of doctors in rural areas, the Australian Government implemented retention incentive payments. However, the distribution of these payments was based on the ASGC-RA classification that demonstrably resulted in perverse and highly inequitable outcomes. For nearly five years, the Rural Doctors Association led the charge in demanding a fairer basis for the allocation of retention payments.

The research response

Staff from the CRERRPHC developed a new scheme that was not just based on geography, but rather incorporated an understanding of what doctors actually do and the extent to which their practice location impacted upon the complexity of their work. Using professional indicators (Total hours worked; Undertakes work in a public hospital setting; On-call for 2+ patients; Difficulty in taking time off) and nonprofessional indicators (Partner employment opportunities; Adequate choice of schools), a new taxonomy was developed. The proposed new scale was shown to be both far more sensitive to important differences, and a better basis for equitable resource allocation based on what doctors do and the impact of the geographical setting on work and life.

The knowledge transfer process

Despite its acknowledged merit, the process of implementing the research recommendation was extremely complex and extended over three years. CRERRPHC staff made innumerable presentations to Government and professional organisations, drafted a major submission to a Senate Enquiry into Rural Workforce Issues, conducted many telephone discussions and held meetings with bureaucrats in Canberra. The CRERRPHC submission received endorsement from several favourable independent review reports to government,

- > *"The committee was impressed with the comprehensive nature of the model....and....is supportive of the methodology and data utilised"* ([Australian Government Senate Enquiry, 2012](#))
- > *"The enhancement....is a valuable one.....based on reasonable evidence derived from data generated through the MABEL Study....A modification to the "model" is recommended as the approach most likely to provide positive enhancements to current systems."* ([Mason Review, 2012](#))
- > *"The model provides a sound and practical basis on which to move forward, and the RDAA has joined other stakeholders – including United General Practice Australia – in supporting this model in-principle."* ([RDAA, 2013](#))

This advocacy was paralleled by ongoing agitation by rural doctors, and ultimately resulted in the Assistant Minister of Health announcing the adoption of a *Modified Monash model* and the formation of an Independent Expert Committee to examine the roll-out of the Rural Retention Grant program on the basis of the new improved classification.

The policy outcome:

The IEC's report was accepted by the Minister and formed input into the 2015 Budget process. There is early evidence that this research is making a difference in the policy arena to bring about improved equity. For example, the Assistant Minister for Health, Fiona Nash, commented that the new classification. *"...will allow support and resources to be focused on areas where there is the most need – in small rural and remote communities"*.

In 2015, uptake of the MMM by the DoH into GP rural retention policy began. The CRERRPHC continues to provide expert advice in relation to expanding use of the MMM for other rural workforce programs and policies.

Section 4 – Discussion and policy implications

This section discusses the implications of the CRERRPHC research for PHC policy and practice. Working in a complex environment characterised by increasing need for PHC associated with an ageing population and within severe fiscal constraint, health authorities are faced with many challenges. Nonetheless, a key plank of the national health reform agenda is increasing equity in health outcomes, nowhere more so than for disadvantaged rural and remote communities. The research undertaken within the CRERRPHC provides for the first time a significant evidence base highlighting the health impact of inequitable access to PHC health services, and will assist health authorities in planning PHC service delivery to small, difficult-to-service communities.

Particularly important too is the work done in developing an evaluation framework using sentinel measures by which to monitor progress in health outcome improvements associated with the provision of sustainable PHC services, the value of which is shown in the Fitzroy Valley case-study. Undoubtedly this new knowledge helps to inform policymakers with the criteria that enable them to plan, monitor and evaluate the equitable provision of health care for all Australians.

POLICY IMPLICATIONS – RESEARCH STREAMS

Stream 1

Research in stream 1 focused on providing empirical evidence to improve our understanding of how access affects the utilisation of health services in rural and remote Australia and as the basis for modelling improved provision of PHC services to areas that currently are characterised by inequitable access to care at times of need. Key policy implications include,

- > The need for scarce resources to be allocated on the basis of greatest need, based on evidence-based programs targeting the specific PHC needs of rural and remote areas. Equitable resource allocation will inevitably involve inequalities, but will generate the greatest improvement in population health outcomes based on improved access to appropriate PHC health services and improved health literacy resulting from access to appropriate care.
- > Measures of access need to be modified to take greater account of health needs, patients abilities to access care, and the availability of appropriate PHC services. Geography alone is an insufficient criterion to guide PHC service planning, and crude indicators (such as provider-to-population ratios) are inadequate measures of access.
- > Researchers require improved access to existing unit record and small-area health data in order to work closely with policy-makers in generating improved measures to guide the provision of appropriate PHC services and underpin specific rural and remote health incentive and program funding.

Stream 2

The goal of the complex and ambitious research undertaken in stream 2 was to ascertain the feasibility of 'benchmarking' the workforce and funding requirements necessary to ensure the availability of high-quality, sustainable PHC services in different rural and remote contexts. Comprehensive data and evidence on this issue are largely non-existent and long-overdue if health service planners, policymakers and funders are to be informed in their decision-making by rigorous evidence about core PHC service requirements of small rural and remote communities. Key policy implications include,

- > Indicators and benchmarks are essential for monitoring the provision of PHC services and evaluating national policies designed to provide effective and equitable health care to all Australians regardless of their place of residence

- > Significantly more research is required to develop an efficient methodology to collect comprehensively the quantitative data associated with the costs of providing PHC in different sized communities located in different geographical settings in order to develop benchmarks for core PHC services
- > Improved access to existing administrative data sources is also required
- > Quantitative analyses of what constitutes a high-performing and sustainable rural and remote PHC service should be complemented by qualitative data provided by existing PHC workers about what they actually do in their communities and the support they require to deliver comprehensive PHC
- > Evidence collected throughout the Stream 2 research validated previous research²⁶ highlighting important environmental enablers and PHC service requirements necessary to ensure accessible and equitable provision of PHC services.

The 2015 work identified a number of limiting factors which need to be addressed in future research. These include sample size, denominator population, enumeration and heterogeneity of services provided.

Stream 3

Stream 3 sought to identify and evaluate innovative PHC service models meeting previously unmet needs as the basis for providing a comprehensive evaluation framework that takes account of the significantly different needs and contexts associated with the provision of comprehensive, appropriate, high-quality and sustainable health care. Key policy implications include,

- > While significant commonality exists in the challenges facing PHC services and workers throughout rural and remote areas, models need to be fit-for-purpose, something that is best achieved by policy-makers and funders working in very close association with local health providers and consumers.
- > Improved access to comprehensive PHC services leads to improved equity in health outcomes. Evidence from detailed case-studies in rural and remote communities indicates that appropriate, high-performing PHC services result in fewer workforce supply issues, improved access to and utilisation of services, better health literacy, and significantly improved population health outcomes.

POLICY IMPLICATIONS – RESEARCH CAPACITY BUILDING

Research capacity building is not dissimilar to the gestation period of elephants! – long and slow, but in the end, extremely rewarding. To be effective, such activity needs to include a diversity of stakeholders – career academics (through PhD, Post-doctoral and early career mentoring support), health practitioners from across the health spectrum, policy-makers and funders, and consumers – ideally working in close co-operation and collaboration. While the ultimate academic goal might be some peer-reviewed publication adding new knowledge, the actual value of the learning experience should not be under-estimated. Indeed, as with many life experiences, the journey is often more valuable than the end-point. The research capacity building activities undertaken by staff from the CRERRPHC provided a most valuable experience for both the providers and the recipients. Key policy insights include,

- > Strategic monitoring of rural and remote PHC services and workforce issues is vital if governments are to meet their avowed goal of accessible, equitable, effective and sustainable high quality PHC for all Australians, regardless of where they live. To undertake this activity, rural and remote health services require the assistance at the local level of staff with well-developed research and evaluation skills.
- > As with rural and remote PHC service provision, research capacity building programs should not be delivered according to a 'one-coat-fits-all' model, but rather should be tailored

to meet the interests of the participants, the needs and contexts of their services, and the types of research and evaluation skills perceived to be most valuable by the service.

- > The most effective policies clearly emerge from health authorities well versed with matching evidence against community needs and behaviour. Invariably, a sound understanding of, and involvement with, the research generation process assist with efficient and effective formulation and implementation of policy and program responses in meeting the needs for appropriate and effective PHC services. Engagement of policy-makers in research capacity building programs, such as was funded and conducted by the Canadian Health Services foundation, should be encouraged.
- > Ideally, ongoing research collaborations of academic researchers, health workers, consumer and policy-makers should be maintained, with input from each participant at all stages of the research in order to ensure that it is feasible and multi-disciplinary, and that the outcomes are relevant and implementable.

Section 5 – Conclusion

In summary, the CRERRPHC research program has generated significant systematic evidence using objective criteria relating to the numerous issues (including the nature, volume, and distribution of the resources required to overcome problems of poor access to PHC services) impacting on the goal of delivering equitable health outcomes for residents of rural and remote Australia.

The CRERRPHC has also modelled the complex array of strategies required to effect policy and practice change. Moreover, it has developed a tool for monitoring impact and then demonstrated, with the Modified Monash Model, the effectiveness of its strategies and monitoring process.

Although much more research is required, the CRERRPHC has made significant advances in linking inputs to outputs and outcomes identified in Watson's Logic Model¹³ (see Figure 2). Based on this new evidence, policy makers charged with the task of providing appropriate and effective PHC services are better placed to counter ineffective historical, political and 'squeaky-wheel' programs that have done little to effect change with evidence that demonstrates significant advance in access, equity and improvements in health outcomes.

Appendices

APPENDIX 1 –REFERENCES

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APPENDIX 2: NATIONAL ADVISORY GROUP – TERMS OF REFERENCE AND MEMBERSHIP

NATIONAL ADVISORY COMMITTEE

Terms of Reference

1. To advise on the conceptualisation, methods and implementation of the CRE research program;
2. To act as a source of expert advice on rural, remote and Indigenous health priorities, strategies and policies relevant to the research program;
3. To assist the research team with identification of, and access to, relevant statistical data and publications;
4. To work with the research team to develop and implement a research transfer strategy;
5. To facilitate communication with government and non-government organisations and their employees;
6. To comment on project outputs.

National Advisory Committee Membership 2011-2014

Name	Agency
Lou Andreatta	> Grant Service Division, Department of Health
Mark Booth	> Primary and Mental Health Care Division, Department of Health
Margaret Brown	> Health Consumers of Rural and Remote Australia Inc.
Ian Cameron	> NSW Rural Doctors Network
Adam Catchpole	> Mapping and Online Services, Workforce Distribution Branch, Department of Health
Linda Cutler	> CETI Rural Division > Royal Flying Doctor Service
Nicholas Duell	> Rural and Regional Health Australia ,Department of Health
Kirsty Faichney	> Department of Health
Terry Findlay	> Australian Primary Health Care Research Institute
Vicki Gordon	> Aboriginal Medical Services Alliance Northern Territory
Gordon Gregory	> National Rural Health Alliance Inc
Anthony Hobbs	> GP and Chair, External Reference Group developing Australia's first National Primary Health Care Strategy and > Therapeutic Goods Administration, Department of Health
Kerri Kellett	> Australian Primary Health Care Research Institute
James Lyons	> Rural and Regional Health Australia, Department of Health
Chips Mackinolty	> Aboriginal Medical Services Alliance Northern Territory
Lisa McGlynn	> Australian Institute of Health and Welfare
Peter McInnes	> Australian Primary Health Care Research Institute
Meredeth Taylor	> Rural and Regional Health Australia ,Department of Health
Robert Wells	> Australian Primary Health Care Research Institute
Mark Wenitong	> Apunipima Cape York Health Council

Meeting Dates of the National Advisory Committee

Meetings of the National Advisory Committee were held as follows:

- > Tuesday, 31 May 2011
- > Tuesday, 22 November 2011
- > Tuesday, 14 August 2012
- > Tuesday, 14 May 2013
- > Wednesday, 13 August 2014

APPENDIX 3: LIST OF STAKEHOLDER MEETINGS AND PRESENTATIONS, INCLUDING REFERENCE GROUP AND ROUND-TABLES

2014

1. **Carey TA** (2014). Using practice-based research to build effective and efficient psychological services. Presentation, Jocelyn Wade Seminar, James Cook University, 11 April 2014.
2. **Humphreys JS** (2014). Rural health research: some personal reflections. Presentation to the Department of Rural Health, University of Melbourne, Shepparton, 6 August 2014.
3. **Humphreys JS** (2014). Why rural communities should be concerned about their health, and how best to ensure timely and equitable access to appropriate health care at times of need? Presentation to the Shepparton Community, 6 August 2014.
4. **Humphreys JS and McGrail M** (2014). Using MABEL data to overcome the rural medical workforce shortage problem. Presentation to the MABEL Research Forum, Melbourne, 10 April 2014.
5. **Kirby S** (2014). Presentation to the Whole of Government Regional Network, organised by NSW Department Premier and Cabinet on the service-learning paper presented at the 2014 Primary Health Care Research Conference, NSW, 27 August 2014.
6. **Kirby S** (2014). Palliative End of Life Care Literature Review on patient/family/carer experience. Presentation to the Australian Rural Health Research Collaboration Governing Body, Broken Hill, 1 August 2014.
7. **Kirby S** (2014). Webex on service integration in COPD. Presentation to the NSW Agency for Clinical Innovation, 12 September 2014.
8. **Lavey L** (2014). Establishing multi-institutional collaborations – a Project Manager's perspective. Presentation to the Monash University School of Rural Health and La Trobe Rural Health School Boot Camp, 24 January 2014.
9. **McGrail M** (2014). Index of Access and the Monash Model: what can they do for rural health? Presentation to the CRERRPHC team, Churchill, 11 March 2014.
10. **McGrail M** (2014). GIS and Rural Health Policy Development: Lessons from Australia. Presentation to the Department of Geography, Northern Illinois University, Illinois, 7 November 2014.
11. **Saurman E** (2014). Improving access to emergency mental health care in the bush. Presentation to eh School of Public Health PhD/MPhil Lunchtime Seminar, Broken Hill, 21 October 2014.
12. **Thomas S** (2014). Core primary health care services in rural and remote Australia: at what cost? Presentation to the CRERRPHC, Alice Springs, 15 July 2014.
13. **Wakerman J and Humphreys JS** (2014). What works to improve access to primary health care services in rural and remote Australia? Presentation to the Policy Roundtable, Commonwealth Department of Health, Canberra, 12 August 2014.
14. **Wakerman J, Humphreys JS, Lyle D, McGrail M and Lavey L** (2014). Access and equity in the provision of primary health care services in rural and remote Australia. Presentation to the CRERRPHC Team meeting, Canberra, 22 July 2014.
15. **Wakerman J, Humphreys JS, Lyle D and McGrail M** (2014). Access and equity in the provision of primary health care services in rural and remote Australia. Seminar presentation to the Commonwealth Department of Health, 12 August 2014.

16. **Wakerman J, Humphreys JS, Lyle D, McGrail M and Lavey L** (2014). Summary of accomplishments: increasing knowledge and influencing policy. Presentation to the CRERRPHC National Advisory Committee Meeting, Canberra, 13 August 2014.

2013

17. **Humphreys JS, Wakerman J, Lyle D, McGrail M and Kirby S** (2013). CRE Progress Report. Presentation to the CRERRPHC National Advisory Committee, Canberra, 14 May 2013.
18. **Kirby S** (2013). Service-learning in allied health in primary schools evaluation framework. Presentation to the Department of Education and Communities, Broken Hill, 25 November 2013.
19. **Kirby S** (2013). Service-learning in allied health in primary schools evaluation framework. Presentation to the School of Rural Health, The University of Melbourne, Shepparton, 25 November 2013.
20. **Kirby S** (2013). Service-learning in allied health in primary schools evaluation – ARC Grant application presentation. Presentation to the CRERRPHC community, Broken Hill, 26 November 2013.
21. **Kirby S** (2013). Nurse led diabetes care in remote Far West. Presentation to the Dean of Medicine, University of Sydney, Broken Hill, 18 July 2013.
22. **Lindeman MA** (2013). Contribution to workshop on prevalence of common conditions in old age such as dementia, falls, depression, chronic pain and incontinence. Presentation to Broome and Kununurra Indigenous communities and health professionals, Broome/Kununurra, 18 September 2013.
23. **Reeve C** (2013). Translating research into practice: Strengthening primary health care in the Fitzroy Valley. Presentation to Fitzroy Crossing health professionals, health services and council, Fitzroy Crossing, 8 March 2013.
24. **Saurman E** (2013). Mental Health Emergency Care – Rural Access Program: Patterns of Use. Presentation to the Mental Health Emergency Care Management, Orange, NSW, 19 April 2013.
25. **Saurman E and Lyle D** (2013). MHEC-RAP Workshop. Presentation to the Mental Health and Drug and Alcohol Service Western NSW Local Health District, Orange, NSW, 17 September 2013.
26. **Saurman E and Lyle D** (2013). MHEC-RAP Meeting. Presentation to the Western NSW Local Health District Executive, Orange, NSW, 1 October 2013.
27. **Thomas S** (2013). Oral presentation to the Health Development-Central Australia, Department of Health, Northern Territory, Alice Springs, 26 August 2013.
28. **Wakerman J and Humphreys JS** (2013). Policy Roundtable: What works to improve access to primary health care services to rural and remote Australia? Presented to the Policy Roundtable, Department of Health and Ageing, Canberra, 16 May 2013.
29. **Wakerman J and Humphreys JS** (2013). Access and equity in the provision of primary health care services in rural and remote Australia. Seminar presentation to the staff from the Department of Health and Ageing, Canberra, 16 May 2013.
30. **Wakerman J and Humphreys JS** (2013). Access and equity in the provision of primary health care services in rural and remote Australia. Presentation to the PHCRED evaluation team, Alice Springs, 14 October 2013.
31. **Ward B, Russell D, Saurman E and Thomas S** (2013). Presentations by CRERRPHC Postdoctoral Fellows and PhD students to the CRERRPHC National Advisory Committee Meeting, Canberra, 14 May 2013.

2012

32. **Kinsman L, Humphreys JS, Wakerman J, Perkins D, Lyle D and McGrail M** (2012). Access and equity in the provision of primary health care services in rural and remote Australia. Presentation to the APHCRI Centres of Research Excellence and Department of Health and Ageing, Canberra, 1 November 2012.
33. **Lyle D, Wakerman J** and Knight S (2012). Submission to the Standing Committee on Regional Australian – enquiry into the use of FIFO and DIDO workforce practices in regional Australia, Commonwealth Government, Melbourne, 1 June 2012.
34. **Reeve C, Wakerman J and Humphreys JS** (2012). Translating Research into Practice: Best Practice Primary Health Care Models. Presentation to health professionals, health service providers and government, Broome and Fitzroy Crossing, 12 May 2012.
35. **Reeve C, Wakerman J and Humphreys JS** (2012). Translating Research into Practice: Evaluation of the Fitzroy Valley Health Service partnership model. Presentation to health professionals, health service providers and government, Broome, 11 September 2012.
36. **Wakerman J, Humphreys JS, Kinsman L, McGrail M and Perkins D** (2012). Presentation to the CRERRPHC National Advisory Committee Meeting, Canberra, 14 August 2012.
37. **Wakerman J, Lyle D, McGrail M, Perkins D and Kinsman** (2012). The CRE: Findings, Challenges and future directions. Presentation to state workforce agencies, Universities (national/international), community health organisations and Department of Health and Ageing, Bendigo, 12 July 2012.

2011

38. **Humphreys JS** (2011). Resolving the rural medical workforce crisis – translating evidence into policy. Presentation to the Australian Government politicians and Rural Doctors Association of Australia, Canberra, 23 March 2011.
39. **Humphreys JS** (2011). Invited presentation: Retaining rural health workers: translating evidence into policy. Presentation to the Victorian Department of Health Better Skills Best Care Breakfast Seminar, Melbourne, 24 May 2011.
40. **Humphreys JS** (2011). Rural health workforce retention in Victoria: Translating evidence into policy, Bendigo, 12 August 2011.
41. **Humphreys JS, Wakerman J, Perkins D and McGrail M** (2011). Presentation to the 2nd meeting of the CRERRPHC National Advisory Committee, Canberra, 22 November 2011.
42. **Humphreys JS, Wakerman J, Perkins D, Lyle D and McGrail M** (2011). Access and equity in the provision of primary health care services in rural and remote Australia. Presentation to the Department of Health and Ageing, Canberra, 23 November 2011.
43. **Humphreys JS, Wakerman J, Perkins D, Lyle D and McGrail M** (2011). Presentation to the 1st meeting of the CRERRPHC National Advisory Committee, Canberra, 31 May 2011.

APPENDIX 4: EVALUATION FEEDBACK FROM PRESENTATIONS

Evaluation feedback from Department of Health and Ageing Roundtable, 12 August 2014, 2.00-3.30pm - What works to improve access to primary health care in rural and remote Australia (Professors John Humphreys and John Wakerman).

(Number of attendees: 16; Number of responses: 7; Response rate: 44%)

1. I had **good general knowledge** of the topic before attending this roundtable

General knowledge	Total
3 Neutral	2
4 Agree	4
5 Strongly Agree	1
Grand Total	7

2. The content of this roundtable confirmed my existing knowledge on the topic

Confirmed knowledge	Total
3 Neutral	1
4 Agree	3
5 Strongly Agree	3
Grand Total	7

3. The content of this roundtable **broadened my knowledge** of the topic

Broaden Knowledge	Total
1 Strongly Disagree	1
2 Disagree	
3 Neutral	2
4 Agree	2
5 Strongly Agree	2
99 No response	
Grand Total	7

4. The content of this roundtable **stimulated my thinking** on the topic

Stimulated Thinking	Total
1 Strongly Disagree	
2 Disagree	
3 Neutral	1
4 Agree	5
5 Strongly Agree	1
Grand Total	7

5. I may be able to **use knowledge gained** from this roundtable in my job

May use knowledge	Total
3 Neutral	2
4 Agree	4
5 Strongly Agree	1
Grand Total	7

6. The content of this roundtable **is directly applicable** to my job

Directly Applicable	Total
1 Strongly Disagree	
2 Disagree	1
3 Neutral	
4 Agree	4
5 Strongly Agree	2
99 No response	
Grand Total	7

Evaluation feedback from Department of Health and Ageing Seminar, 12 August 2014, 12.30-1.30pm - Access and equity in the provision of primary health care in rural and remote Australia (Professors John Humphreys and John Wakerman).
(Number of attendees: 46; Number of responses: 35; Response rate: 76%)

1. I had **good general knowledge** of the topic before attending this seminar

General knowledge	Total
2 Disagree	6
3 Neutral	9
4 Agree	18
5 Strongly Agree	2
Grand Total	35

2. The content of this seminar **confirmed my existing knowledge** on the topic

Confirmed knowledge	Total
2 Disagree	5
3 Neutral	11
4 Agree	15
5 Strongly Agree	3
99 No response	1
Grand Total	35

3. The content of this seminar ***broadened my knowledge*** of the topic

Broaden Knowledge	Total
1 Strongly Disagree	1
2 Disagree	2
3 Neutral	4
4 Agree	11
5 Strongly Agree	16
99 No response	1
Grand Total	35

4. The content of this seminar ***stimulated my thinking*** on the topic

Stimulated Thinking	Total
1 Strongly Disagree	
2 Disagree	2
3 Neutral	1
4 Agree	14
5 Strongly Agree	18
Grand Total	35

5. I may be able to ***use knowledge gained*** from this seminar in my job

May use knowledge	Total
1 Strongly Disagree	1
2 Disagree	3
3 Neutral	8
4 Agree	12
5 Strongly Agree	10
99 No response	1
Grand Total	35

6. The content of this seminar ***is directly applicable*** to my job

Directly Applicable	Total
1 Strongly Disagree	1
2 Disagree	2
3 Neutral	13
4 Agree	6
5 Strongly Agree	11
99 No response	2
Grand Total	35

APPENDIX 5: FINAL SURVEY – HEALTH CARE ACCESS



Centre of Research Excellence in Rural and Remote Primary Health Care

Access to Health Care in Small Rural Communities

This survey is seeking information about access to, and the use of, doctors (general practitioners) by people in your community. The study is being conducted by staff from the *Centre of Research Excellence in Rural and Remote Primary Health Care (CRE)* at Monash University School of Rural Health in Bendigo.

This questionnaire will only take 10 – 15 minutes to complete. Your participation in this survey is entirely voluntary. Please complete only one questionnaire per household.

All information you provide will be treated confidentially. Survey responses will be analysed and presented so that it will not be possible to identify any individual responses. The results of the survey will be available on the CRE website (www.crerrphc.org.au) in 2013.

If you have any queries relating to this survey, please do not hesitate to contact Dr Bernadette Ward on telephone (03) 5440 9064 or 0427 059 205. Thank you for your time.

SECTION 1 – YOUR HEALTH

1. In general, would you say that your health is: *(please tick one)*



Excellent

☐

Very Good

☐

Good

☐

Fair

☐

Poor

☐

SECTION 2 – VISITS TO A DOCTOR

2. When was the last time you visited a doctor (GP) about your own health? *(please tick one)*

During the last month

☐

Between 1 and 3 months ago

☐

Between 3 and 12 months ago

☐

More than 12 months ago

☐

Don't know

☐

3. a. How far do you normally travel to visit a doctor (GP)?

..... Distance in kilometres

b. How long does it normally take you to travel to visit a doctor (GP)?

..... Time in minutes

4. a. Do you have a usual doctor (GP) who you visit?

☐ Yes

Go to question 4b

☐ No

Go to question 5

b. If yes, what is the name of the town where your usual GP is located?

..... Name of Town of usual GP

5. Is the GP you visit the closest one to your home?

☐ Yes

Go to question 7

☐ No

Go to question 6

☐ Don't know

Go to question 7

6. If you travel to a GP who is not the closest one to your home, what is the reason for travelling further? (please tick all that apply)

☐ Combine appointment with other activity (eg. shopping, visiting friends or family)

☐ Convenient to my work location

☐ Like the doctor

☐ Doctor knows my medical history

☐ Easy to get appointment

☐ Large practice that includes other health professionals

☐ Cost of consultation

☐ Other factor (Please specify)

7. How do you usually travel to your GP? (please tick one)

☐ Private vehicle is always available when needed

☐ Private vehicle driven by some other family member, neighbour or friend

☐ Public transport (train, bus service including school bus)

☐ Walk

☐ Other (please specify)

SECTION 3 – ACCESS TO A DOCTOR FOR A NON-EMERGENCY CONSULTATION

8. If you need to see a GP for something that wasn't an emergency, what is the maximum time that you are prepared to travel to get there?

..... Maximum time in minutes

9. Thinking about yourself, which factor in each pair is the most important when you decide to visit a doctor for a non-emergency consultation?

(FOR EACH PAIR, TICK WHICH ONE OF THE TWO ALTERNATIVES YOU THINK IS MORE IMPORTANT)

Availability of a GP	☐	OR	Cost to visit a GP	☐
Seeing a GP you prefer	☐	OR	Availability of a GP	☐
Cost to visit a GP	☐	OR	Distance to travel to a GP	☐
Availability of a GP	☐	OR	Distance to travel to a GP	☐
Seeing a GP you prefer	☐	OR	Cost to visit a GP	☐
Distance to travel to a GP	☐	OR	Seeing a GP you prefer	☐

10. a. Is accessing a GP ever a problem for you?

- ☐ Yes **Go to question 10b**
☐ No **Go to question 11**

b. What is the problem?

.....
.....

11. In the last 12 months, have you ever put off seeing a GP because you could not get an appointment?

- ☐ Yes
☐ No

SECTION 4 – ABOUT YOU

12. Are you male or female? (please tick one)

- ☐ Male
☐ Female

13. How old are you? (please tick one)

- ☐ 18-24
☐ 25-34
☐ 35-44
☐ 45-54
☐ 55-64
☐ 65-74
☐ 75+

14. Your place of residence:

a. If you live in a town, please indicate its name and its postcode

..... Name of town

..... Postcode of town

b. If you live outside of a town, please indicate how many kilometres from the nearest town and the name of that town

..... Kilometres from nearest town

..... Name of nearest town

15. How many years have you lived at your current address?

..... Years

16. How many registered motor vehicles are garaged at this address? (Exclude motorbikes, scooters, tractors etc)

.....

17. How many people live at this address?

..... Adults

..... Children under the age of 18

18. What is your current occupation?

.....

19. Is there anything else you would like to tell us about accessing a doctor or other health service?

.....

.....

That concludes this survey. Thank you very much for your participation

If you would be willing to participate in a follow-up telephone interview to provide more detailed information about your use of health services, please write your name and telephone number below.

Name: Telephone:

Please place the completed survey in the postage-paid envelope and return it to:

Dr Bernadette Ward
Monash University School of Rural Health
PO Box 666
Bendigo Vic 3552

APPENDIX 6: BENCHMARKING SURVEY INSTRUMENT



SURVEY

**Equity of Access to Primary Health Care Services
in Rural and Remote Australia:**

**Developing funding benchmarks to ensure sustainable,
high quality rural and remote practices**

A study by the Centre of Research Excellence in Rural and Remote Primary Health Care

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2014

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**Equity of Access to Primary Health Care Services in Rural and Remote Australia:
Developing funding benchmarks to ensure sustainable, high quality rural and
remote practices**

Thank you for agreeing and taking the time to participate in this important research. The *Centre of Research Excellence in Rural and Remote Primary Health Care* is undertaking research on how to provide equitable access to sustainable, high quality primary health care services for residents of non-metropolitan Australia. Our purpose is to ensure the resources necessary to provide sustainable, high quality care are available and allocated equitably to different rural and remote communities in Australia.

To achieve this, we are collecting data about the costs associated with operating a high quality primary health care practice such as yours. Because costs vary according to the size and location of practices, we are surveying a sample of high performing practices from all States and Territories.

Ethics approval for this project has been granted by the Central Australian Human Research Ethics Committee. Your participation in this survey is entirely voluntary, and you may withdraw your participation at any time.

All information will remain entirely confidential. The responses to this survey will be analysed and presented such that it will not be possible to identify individuals or practices.

If you have any concerns or questions please contact any member of our research team whose contact details appear below. Thank you for your time.

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Central Australian Human Research Ethics Committee Secretariat
Project HREC-12-57
08 8951 4700

Practice Details

Practice name:					
Address:					
Phone:					
Email:					
Hours of operation:	Monday – Friday	From:		To:	
	Saturday	From:		To:	
	Sunday	From:		To:	
	Public Holidays	From:		To:	
Service functions:	Please tick all applicable:				
	☐ Outreach (such as to other smaller communities in your catchment)				
	☐ Home visiting				
	☐ On-call (undertaken out of normal hours)				
Service utilisation:	• How many patients are currently registered with this practice?				
	• How many patients have attended this practice at least once in the last financial year ending 30 June 2013?				
	• What was the total number of consultations provided in the last financial year ending 30 June 2013?				

Type of Service:	☐ Sole GP ☐ Group GP ☐ ACCHS ☐ Multi-Purpose Service (MPS) ☐ Other
Model of Service:	☐ Discrete (walk-in/walk-out) ☐ Integrated (shared care, primary health care teams, multi-purpose services) ☐ Comprehensive PHC (ACCHS) ☐ Outreach (hub-and-spoke, visiting service, FIFO/DIDO)

Human Resources

Please indicate the number of staff currently employed in this practice, and any funded vacancies.

Professional Category	Number	Number of Full-time Equivalents	Number of Funded Vacancies
Doctor			
Registered Nurse			
Nurse Practitioner			
Midwife			
Enrolled Nurse			
Aboriginal Health Worker			
Audiologist			
Dietitian			
Occupational Therapist			
Optometrist			
Oral/Dental Health Practitioner			
Pharmacist			
Physiotherapist			
Podiatrist			
Psychologist			
Social Worker			
Speech Pathologist			
Other			
Practice Manager			
Administration/clerical staff			
Other (please specify)			

Annual Costs

Please provide data for the last financial year ending 30 June 2013.

Resources	Annual Operating Costs \$
Human Resources (Please include PAYG wages, salaries or contract package for each category of staff, including 'on costs')	
• Doctors	
• Nurses	
• Aboriginal Health Workers	
• Allied Health Practitioners	
• Managers	
• Admin/Clerical staff	
• Expenditure for locums and short term agency staff	
• Other	
Professional Development (Please include all expenses associated with orientation, training, seminars, conferences, related travel, professional membership)	
Recruitment (Please include all expenses associated with travel, housing support, relocation)	
Communications (Please include all expenses associated with telephone, mobile phone, fax, photocopier, video conference facilities, IT support)	
Vehicle Operation (Please include all expenses associated with fuel, registration, insurance, maintenance, profit/loss on sale, allowances, subsidies)	
Buildings (Please include all expenses associated with insurance, maintenance, cleaning services utilities)	
Drugs, Supplies, Medical Consumables and Equipment (Please include all expenses associated with pharmaceuticals)	
Accounting/Legal/Medical Insurance expenses	
Other expenses	

Capital Costs and Depreciation

1. Is the land and building from which the practice operates owned by the practice or leased?

☐ Owned by the practice:

☐ Leased

☐ Other, please describe:

2. Please estimate the square meters of building space from which the practice/service operates

3. For the last financial year ending 30 June 2013 please provide details of the amounts recorded in depreciation or leases for the following resources?

Resource	Depreciation (if the practice is owned) \$	Cost of Lease \$
Building*		
Motor vehicles		
Computer/information technology equipment		
Other equipment (including medical equipment)		
Other		
Total		

*Include depreciation for leasehold improvements (eg. associated with fit-outs) in building depreciation.

Primary Health Care Services

Please indicate with a tick (✓) whichever of the following applies - whether your practice provides each of the following services directly by resident staff, whether it uses visiting services to provide them, if other services provide them or whether they are not available in your community. Indicate if current service availability is adequate for community needs.

Service Category	PHC Services	Yes we provide this service directly using resident staff	This service is provided by other services operating from our practice	This service is provided by others in the community (e.g. GPs, hospitals, visiting professionals)	This service is available in the community (adequately meets community needs)
Care of the Sick and Injured	24 hour care, resuscitation and emergency care Treatment of injury and poisoning Pathology Radiology Access to essential medicines Patient advocacy Counselling				
Mental Health Services	Drug and alcohol treatment Self-harm and mental care Child and young people's mental health				
Maternal and Child Health	Immunisation Audiology Dietetics Occupational therapy Optometry Physiotherapy Podiatry Psychology Counselling/social work/family violence				
Allied Health	Speech pathology Aged care and disability services Palliative care				

Service Category	PHC Services	Does your practice provide this service directly using resident staff?	This service is provided by other health care workers in the community (e.g., CHC, hospital, visiting professionals)	This service is not provided in your community	Current service is adequate for community needs
Sexual and Reproductive Health	STI and blood borne viruses				
	Family planning				
	After trauma				
Rehabilitation	Post CVA				
	Alcohol and other drug rehab				
Oral/Dental Health	Immunisation				
	Oral cancer and disease control				
	Targeted population/health promotion programs				
	Screening programs				
Public Health/Illness Prevention	Youth programs				
	Well men's and women's services				
	Advocacy				

Questions for Practice Principal

- We would like to begin by validating the key information provided on the questionnaire:
 - Staffing
 - Costs (are these from tax documents, payroll, estimates?)
 - Number of patients registered and number of consultations in the last year
 - Services provided, not provided
- We would like to know the population size that your practice serves
 - What is the population covered by this primary health care service?
 - What is the geographical catchment area of this practice? (include the names of other communities served by this practice?)
 - Are there any specific needs in your catchment area that affect the costs of providing primary care services? (community needs, mobility, socio-economic, cultural, other practices)
- Your practice has been identified as one that provides high quality care to patients. What are the essential requirements for ensuring your practice continues to maintain a high level of quality care?
- What barriers has this practice faced in providing a high quality service and how have you addressed them?
- Are there any other comments you would like to make in relation to providing high quality, sustainable primary health care services in this area?

Thank you for your participation

APPENDIX 7: LIST OF CONFERENCE PRESENTATIONS

2015

1. **Daly S and Kirby S** (2015). Far West mental Health Recovery Centre: a partnership model of recovery focused mental health inpatient care, presentation at the *13th National Rural Health Conference*, Darwin, 24-27 May 2015.
2. **Kirby S, Saurman E, Lyle D** and Passey M. (2015). Assessing the evidence of rural palliative care need to inform research design. Presentation at the *2015 Primary Health Care Research Conference*, Adelaide, 29-31 July 2015.
3. **Lavey L** (2015). Research Impact Multi-tool - a one stop database for measuring and tracking research outputs. Presentation at the *2015 Australasian Research Management Society Conference* 2 October 2015, Singapore.
4. **Lavey L and McGrail M** (2015). Getting research evidence into rural health policies: what does it take? Presentation at the *13th National Rural Health Conference*, Darwin, 24-27 May 2015.
5. **Lavey L**, Spooner C and Mukuka C (2015). Research Administration Managers and Research Project Managers - playing a key role in establishing and managing multi-institutional collaborations. Presentation at the *2015 Australasian Research Management Society Conference*, 1 October 2015, Singapore.
6. **Lyle D** (2015). PHC Research Matters - Rural and Remote Perspective, Plenary presentation at the *2015 Primary Health Care Research Conference*, Adelaide, 29-31 July 2015.
7. **McGrail M** (2015). Targeting outreach: the influence of Australia's rural outreach policy, presentation at the 9th Health Services and Policy Research Conference, 7-9 December 2015.
8. **McGrail M and Russell D** (2015). Rural medical workforce pipelines: Unpacking the role of rural origin. Presentation at the *2015 Primary Health Care Research Conference*, Adelaide, 29-31 July 2015.
9. **Reeve C** (2015). The challenge of providing fair care. Keynote presentation at the *13th National Rural Health Conference*, Darwin, 24-27 May 2015.
10. **Russell D** (2015). Important new empirical evidence to guide rural health workforce retention policies. Presentation at the *13th National Rural Health Conference*, Darwin, 24-27 May 2015.
11. Spooner C, **Lavey L** and Mukuku C. (2015). Lessons from establishing and managing multi-institution centres of research excellence. Presentation at the *2015 Primary Health Care Research Conference*, Adelaide, 29-31 July 2015.
12. **Wakeman J** (2015). Research excellence, knowledge exchange and policy development. Keynote presentation at the *13th National Rural Health Conference*, Darwin, 24-27 May 2015.

2014

13. **Chisholm M** (2014). *Life with Dementia: Relations*, presentation at the 2nd International Conference for the Centre for Dementia Research (CEDER), Linköping University, Norrköping, Sweden, 15-17 October 2014.
14. **Chisholm M** (2014). *Making Research Matter*, presentation at the 13th National Conference of Emerging Researchers in Ageing, Adelaide, 24-25 November 2014.
15. **Chisholm M** (2014). *50 Not Out: aiming for a century!*, presentation at the 47th Australasian Association of Gerontology National Conference, Adelaide, 26-28 November 2014.
16. **Guthridge S** (2014). *50 years in the making – NT health information, 1967-2014*. Invited speaker at the Mt Isa Centre for Rural and Remote Health (MICRRH) Conference – Are you remotely interested?, Mt Isa, 31 July to 1 August 2014.
17. Johnston J, Hindman J and **Saurman E** (2014) *Mental Health Emergency Care by Telehealth in Western NSW*. Invited oral presentation at the RANZCP Congress, Perth, 11-15 May 2014.

18. **Kirby S** and Cummins C (2014). *Lost in translation: getting PHC research into evidence*. Oral presentation at the NSW Rural Health and Research Progress 2014 – 'Rural Health Horizons – Shaping our Future', Dubbo, NSW, 9 September 2014.
19. **Kirby S**, Brunero C, Hill D, Merritt J, Jones D and **Lyle D** (2014). *Two birds with one stone: rural health inequities and better student learning*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
20. **Lindeman MA** and **Grant L** (2014). *Experiences of Central Australian workers regarding suicide risk among Aboriginal youth*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
21. **Lindeman MA**, Jensen H, Bell D and Farthing A (2014). *A 'key worker' model to improve service pathways for Aboriginal people with dementia in remote Central Australia*. Oral presentation at the Services for Australian Rural and Remote Allied Health (SARRAH) National Conference, Kingscliff, NSW, 17-20 September 2014.
22. **McGrail M** and **Humphreys JS** (2014). *A new Index of Access and the Monash Model: two 'fit-for-purpose' measures for rural workforce planning and resource allocation*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
23. **Meade C** and **Ward B** (2014). *Improving access to general practice care in residential aged care facilities*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
24. **Reeve C** (2014). *The Inequity of Equality*. Invited keynote presentation at the Rural Medicine Australia 2014 Conference, Sydney, 30 October - 1 November 2014.
25. **Reeve C** (2014). *Exposure to public health – a pathway to social accountability*. Oral presentation at The Global Community Engaged Medical Education Muster, Uluru, NT, 27-30 October 2014.
26. **Roberts D**, **Ward B** and **Russell D** (2014). *Health outcomes associated with a rural diabetes self-management program*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
27. **Russell D**, **Humphreys JS**, **McGrail M**, Cameron I and Williams P (2014). *The value of survival analysis for evidence-based rural medical workforce planning*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
28. **Saurman E**, Johnston J, Hindman J, **Kirby S** and **Lyle D** (2014). *Improving access to emergency mental health care in the bush*. Poster presentation to the Success and Failure in Telehealth Conference, Adelaide, November 2014.
29. **Thomas S**, **Wakerman J** and **Humphreys JS** (2014). *Population thresholds for primary health care services in rural and remote Australia*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
30. **Thomas S**, **Zhao Y**, **Guthridge S** and **Wakerman J** (2014). *Evaluating the costs and health outcomes associated with primary care utilisation for Indigenous Australians with diabetes in remote Northern Territory communities*. Oral presentation at the 2nd International Primary Health Care Reform Conference, Brisbane, 17-19 March 2014.
31. **Ward B**, **Humphreys JS** and **McGrail M** (2014). *How different aspects of access influence rural Australians decision to utilise a general practitioner*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
32. **Zhao Y**, **Thomas S**, **Guthridge S** and **Wakerman J** (2014). *Better health outcomes at lower costs: the benefits of primary care utilisation for chronic disease management in remote Indigenous communities in Australia's Northern Territory*. Poster presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.

2013

33. Berends L, **Buykx P**, Room R and Lubman DI (2013). *Research to inform alcohol and other drug system design and development in a climate of change*. Oral presentation at the 8th Health Services and Policy Research Conference, Wellington, New Zealand, 2-4 December 2013.
34. **Carey TA** (2013). *The method of levels: A transdiagnostic approach to effective and efficient patient-centred treatment in rural and remote Australia*. Workshop at the 48th Annual Conference of the Australian Psychology Society, Cairns 8-12 October 2013.

35. **Humphreys JS** (2013). *Achieving change through research: How rural doctors are leading the way*, Invited presentation at the Rural Medicine Australia 2013 Conference, Cairns, 31 October - 2 November 2013.
<http://webcast.gigtv.com.au/Mediasite/Catalog/catalogs/RM2013>
36. **Jones M**, Bushnell J and **Humphreys JS** (2013). *Influence of medical program placements on medical graduates' attitudes to rural practice: a national study based on the MSOD project*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July, 2013.
37. **Jones M**, **Humphreys JS** and Bushnell J (2013). *Clinical placements and graduate attitude to in-need medical disciplines*. Oral presentation at the Health Workforce Australia 2013 Conference, Adelaide, 18-20 November 2013.
38. **Jones M**, Wilson I and Eley D (2013). *Medical training and the point of conception of a rural doctor: a longitudinal study based on the MSOD project*. Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
39. **Kirby S**, McCarron T, Moore M, Johnson P, **Perkins D** and **Lyle D** (2013). *Does nurse-lead diabetes care work in the remote locations?* Poster presentation at the Rural Health Congress, Port Macquarie, October 2013.
40. **Kirby S**, McCarron T, Moore M, Jonson T, **Perkins D** and **Lyle D** (2013). *Managing sugar in the bush*. Poster presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
41. **Kirby S**, **Perkins D** and **Lyle D** (2013). *How can we make education, training and supervision interventions more effective for recruitment and retention in the rural and remote primary health care workforce?* Poster presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
42. **Lindeman MA**, Dingwall KM, Bell D (2013). *"If you don't have that knowledge you don't ask that question". Staff readiness for conducting assessments in remote Indigenous community contexts*. Oral presentation at the 10th National Allied Health Conference, Brisbane, 16-18 October 2013.
43. **Lindeman MA**, Taylor KA, Dingwall KM, Lopes J, Reid J and Grant L (2013). *Towards systematic data collection and referral pathways for Indigenous youth suicide attempts*. Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
44. **McGrail and Humphreys JS** (2013). *Understanding the dynamics of rural GP mobility: who moves where and why?* Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
45. **McGrail M and Humphreys JS** (2013). *Development of a National Index of Access for rural primary health care*. Oral presentation at the 8th Health Services and Policy Research Conference, Wellington, New Zealand, 2-4 December 2013.
46. **Perkins D** (2013). *The Australian Rural Mental Health Cohort Study: Implications for policy and practice*. Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
47. **Perkins D** (2013). *The Australian Rural Mental Health Cohort Study: key learnings*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
48. **Reeve C** (2013). *Prevocational exposure to public health - a pathway to rural, remote and public health practice*, Oral presentation at the RACP NT ASM and CARPA Conference, Alice Springs, 8-9 November 2013.
49. **Reeve C** (2013). *Strengthening Primary Health Care*, Oral presentation at the RACP NT ASM and CARPA Conference, Alice Springs, 8-9 November 2013.
50. **Russell D**, **Wakerman J** and **Humphreys JS** (2013). *How long will you stay?* Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
51. **Saurman E**, **Lyle D** and **Perkins D** (2013). *Use of the MHEC-RAP by Hospital Emergency Departments*. Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
52. **Sirrett D** (2013). *Fly-in, Fly-out health workforce models*. Oral presentation at the RACP NT ASM and Central Australian Rural Practitioners Association Conference, Alice Springs, 8-9 November 2013.

53. Spooner C and **Lavey L** (2013). *Establishment of multi-institutional centres of research excellence – tips for new players*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
54. **Thomas S, Wakerman J and Humphreys JS** (2013). *Access to core primary health care services in rural and remote Australia*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
55. **Wakerman J**, Bourke L and **Humphreys JS** (2013). *Is remote health different to rural health?* Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
56. **Wakerman J** (2013). Health Reform Panel Discussion. Facilitator at the What's new in health and health reform: RACP NT ASM and CARPA Conference, Alice Springs, 8-9 November 2013.
57. **Ward B, Humphreys JS, Russell D, Chisholm M, McGrail M, Buykx P and Wakerman J** (2013). *The impact of primary health care access on utilisation and health outcomes: Implications for policy in rural and remote areas*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.

2012

58. Bell D, **Lindeman, MA** and Reid JB (2012). *Needs assessment and aged care outcomes for remote-based Aboriginal people*. Paper presented at the Australian Association of Gerontology National Conference, Brisbane 2012. Australasian Journal on Ageing, vol.31 Supplement 2, December 2012, p4.
59. **Humphreys J** (2012). *Health workforce planning and the provision of primary health care services in rural and remote Australia*. Keynote speaker at the Leading the way in rural health reform, Inspire 2012 Conference Health Workforce Australia, Melbourne 13-14 November 2012.
60. Jensen H, LoGiudice D, Smith K, **Lindeman MA**, Flicker L, Atkinson D (2012). *Pathways to care for Indigenous people with dementia in Central Australia*. Services for Australian Rural and Remote Allied Health (SARRAH), Launceston, 20-23 September 2012.
61. **Kinsman L** (2012). *Never Underestimate the Impact of Policy*, presentation at the International Primary Health Care Reform Conference, Brisbane 5-7 March 2012.
62. **Lindeman M** (2012). *Recognising and responding to dementia in Indigenous communities*. Workshop offered 3 times in 2012: 29-30 March in Alice Springs 2012; 18-19 September 2012 in Launceston (as a pre-conference workshop of the SARRAH conference); 8-9 October 2012 in Port Augusta.
63. **Lindeman MA**, Bell D, Reid JB (2012). *How effectively do aged care assessment processes translate into real needs-based care in remote Aboriginal communities of Central Australia?* PHC Research Conference Inform, influence, implement: Research improving policy and practice; Canberra, 18-20 July 2012.
64. **Lindeman MA** and Jensen H (2012). *Dementia in Indigenous communities: a 'knowledge-to-action' professional development program for remote practitioners*. Services for Australian Rural and Remote Allied Health (SARRAH), Launceston, 20-23 September 2012.
65. **Lindeman MA** and Reid JB (2012). *Researching aged and dementia care in Central Australian Indigenous communities*. Invited paper presented at the 3rd National Workshop of the Australian Association of Gerontology Aboriginal and Torres Strait Islander Ageing Committee (AAG ATSIAC), Brisbane, 19 November 2012.
66. **Lyle D** and Jones D (2012). *Enhancing what is spoken in Broken Hill*, presentation at the Inspire 2012 Conference, Health Workforce Australia, Melbourne, 13-14 November 2012.
67. **McGrail MR and Humphreys JS** (2012). *Formulating a more appropriate and equitable system for allocating rural and remote health workforce incentives*, Primary Health Care Research Conference, Canberra, 18 July 2012.
68. **Perkins D and Kirby S** (2012). *Review of Education, Training and Supervision Models in Rural and Remote Primary Health Care*, NSW Rural Health and Research Congress, Wagga, 5-7 November 2012.

2011

69. **Carey TA** (2011). *Improving access by changing perspective: A focus on “how” rather than “what”*. Paper presented at the annual conference of the British Association of Behavioural and Cognitive Psychotherapies (BABCP). Surrey, England.
70. **Carey TA** (2011). *The untapped potential of primary care psychology – A Scottish case study*. Paper presented at the annual conference of the Australian Psychological Society. Canberra, Australia.
71. **Humphreys JS** (2011). *Sustaining rural health services and improving community well-being through research: lessons from Elmore*, Keynote Address at the Rural Health Research Colloquium – Sustaining Rural Health through Research’, 12th October, Dubbo, NSW.
72. **Humphreys JS, Wakerman J, Perkins D, Lyle D, McGrail M and Kinsman L** (2011). *Centre of research excellence in Rural and Remote Primary Health Care*, 2011 PHC Research Conference - ‘Inspirations, Collaborations, Solutions’, Brisbane, 14 July 2011.
73. **Lindeman MA** (2011). *Recognising and responding to dementia in Indigenous communities: integrating research findings into a professional development program*. Paper presented at the Connecting young and old: connecting generations. AIATSIS National Indigenous studies conference, Canberra, 19-22 September 2011.
74. **Lindeman MA, Taylor KA, and Stothers K** (2011). *It’s all about good intercultural communication: dementia awareness in Indigenous communities*. Paper presented at the 9th Asia/Oceania Regional Congress of the International Association of Gerontology and Geriatrics, Melbourne. 23-27 October 2011.
75. **Lindeman MA** (2011). *The Northern Territory program: a focus on capacity building and community responsiveness*. Paper presented at the PHCRED Tri-State Conference, Adelaide. 15-16 September 2011.
76. **Wakerman J** (2011). *The Policy process*. Invited paper to Global Health Conference, Sydney, July 2011.
77. **Wakerman J** (2011). *The Policy process*. Invited paper to National Rural Leadership Development Seminar, Victor Harbour, 6 August 2011.

APPENDIX 8: LIST OF PEER-REVIEWED AND OTHER PUBLICATIONS

CRERRPHC journal articles submitted for review

1. **Carey TA**, Tai SJ and Lampshire D (Submitted for review). Improving access to psychological services in remote Australia with a patient-led clinic, *BMC Research Notes*.
2. **Chisholm M and Ward B** (Submitted for review) Older men's experiences of accessing general practitioner services in rural areas, *Australian Journal of Rural Health*.
3. **Lyle D, Saurman E, Kirby S**, Jones D, **Humphreys JS, Wakerman J** (submitted for review) What do evaluations tell us about implementing new models in rural and remote primary health care? Findings from a narrative analysis of seven service evaluations conducted by an Australian Centre of Research Excellence. *Rural and Remote Health*
4. **McGrail MR, Russell DJ and Humphreys JS** (submitted for review) Rural health service planning: The importance of how 'access' to primary health care is measured, *Australian Health Review*.
5. **McGrail MR**, Wingrove PM, Patterson SM, **Humphreys JS, Russell DJ** and Bazemore AW (submitted for review). Measuring the attractiveness of rural communities in accounting for differences of rural primary care workforce supply, *Rural and Remote Health*.
6. **Thomas SL, Humphreys JS and Wakerman J** (Submitted for review) What does it cost to provide equity of access to high-quality, comprehensive primary health care in rural Australia? A pilot study. *Rural and Remote Health*.

CRERRPHC journal articles accepted for publication

7. **Russell D and Humphreys JS** (Accepted for Publication). Meeting the primary health care needs of small rural communities: Lessons for health service planners (Elmore longitudinal study), *Rural and Remote Health*.
8. **Russell D, McGrail M and Humphreys JS** (Accepted for publication). Determinants of rural Australian primary health care worker retention: A synthesis of key evidence and implications for policymaking, *Australian Journal of Rural Health*.

2016

9. **Saurman E** (2016). Improving access: modifying Penchansky and Thomas's Theory of Access, *Journal of Health Services Research and Policy*, 21(1): 36-39.

2015

10. **Carroll V, Reeve C, Humphreys JS, Wakerman J** and Carter M (2015). Re-orienting a remote acute care model towards a primary health care approach: key enablers, *Rural and Remote Health*, 15(2942): 1-7.
http://www.rrh.org.au/publishedarticles/article_print_2942.pdf
11. **McGrail M and Humphreys JS** (2015). Spatial access disparities to primary health care in rural and remote Australia, *Geospatial Health*, 10(2): 138-143.
<http://www.geospatialhealth.net/index.php/gh/article/view/358/332>
12. **McGrail M, Humphreys JS and Ward B** Accessing doctors at times of need – measuring the distance tolerance of rural residents for health-related travel, *BMC Health Services Research*, 15(212): 1-9.
<http://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-015-0880-6>
13. **Reeve C, Humphreys JS and Wakerman** (2015). A comprehensive health service evaluation and monitoring framework, *Evaluation and Program Planning*, 53(2015): 91-98.
<http://www.sciencedirect.com/science/article/pii/S0149718915000932>
14. **Reeve C, Humphreys JS, Wakerman J, Carroll V**, Carter M, O'Brien T, Erlank C, Mansour R and Smith B (2015). Community participation in health service reform: the

- development of an innovative remote Aboriginal primary health care service, *Australian Journal of Primary Health*, 21: 409-416. <http://www.publish.csiro.au/paper/PY14073.htm>
15. **Reeve C, Humphreys JS, Wakerman J, Carroll V** and Reeve D (2015). Strengthening primary health care: achieving health gains in a remote region of Australia, *Medical Journal of Australia*, 202(9): 483-488. <https://www.mja.com.au/journal/2015/202/9/strengthening-primary-health-care-achieving-health-gains-remote-region-australia>
 16. **Saurman E, Kirby S and Lyle D** (2015). No longer 'flying blind', how access has changed emergency mental health care in emergency departments, a qualitative study, *BMC Health Services Research*, 15(156): 1-11. <http://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-015-0839-7>
 17. **Thomas S, Wakerman J and Humphreys JS** (2015). Ensuring equity of access to primary health care in rural and remote Australia – what core services should be locally available? *International Journal for Equity in Health*, 14(111): 1-8. <http://equityhealth.biomedcentral.com/articles/10.1186/s12939-015-0228-1>
 18. **Wakerman J** (2015). Editorial: Rural and remote health: a progress report, *Medical Journal of Australia*, 202(9): 461-463. <https://www.mja.com.au/journal/2015/202/9/rural-and-remote-health-progress-report>

2014

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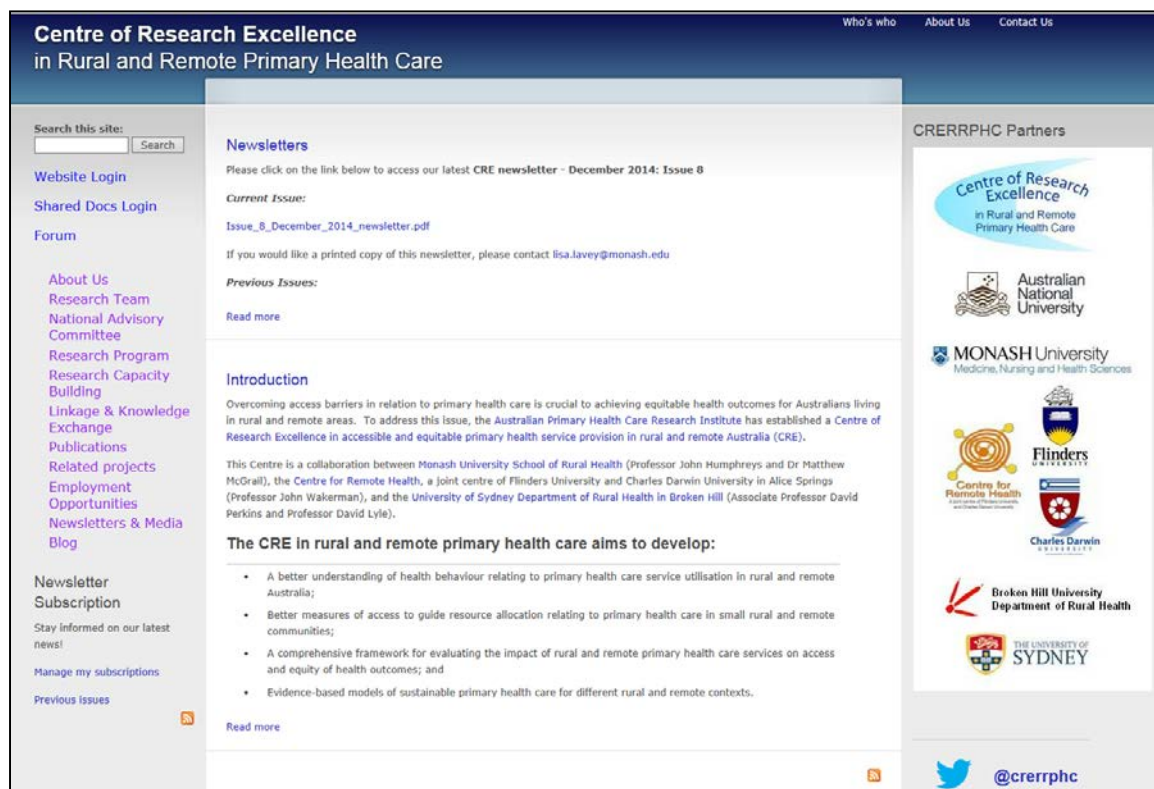
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APPENDIX 9: WEBSITE DETAILS AND FRONTISPIECE

Website address: www.crerrphc.org.au



APPENDIX 10: NEWSLETTERS



Centre of Research Excellence
In Rural and Remote Primary Health Care

Newsletter of the

Centre of Research Excellence in Rural and Remote Primary Health Care

Issue 1: November 2012

Editorial



John Wakeham

The Centre of Research Excellence in Rural and Remote Primary Health Care (CREPRHC) is one of eight Centres of Research Excellence (CRE) funded by the Australian Department of Health and Ageing through the Australian Primary Health Care Research Institute (see <http://aphrci.anu.edu.au/research-program>).

This CREPRHC is a collaboration between Monash University School of Rural Health in Bendigo and Geelong, the Flinders University and Charles Darwin University Centre for Remote Health in Alice Springs, and the University of Sydney Department of Rural Health in Broken Hill. Its research program focuses on how to provide equitable primary health services to residents throughout rural and remote Australia. Specifically, it aims to:

- better understand health behaviour relating to primary health care service utilisation in rural and remote Australia;
- develop better measures of access to guide resource allocation relating to primary health care in small rural and remote communities;
- develop a comprehensive framework for evaluating the impact of rural and remote primary health care services on access and equity of health outcomes; and

• evaluate effective evidence-based models of sustainable primary health care for different rural and remote contexts.

In addition, the CREPRHC has developed a very robust research capacity building program which encompasses PhD and Post Doctoral training, and also includes the engagement of health service practitioners in a wide variety of research projects relevant to their services.

A key goal of the CREPRHC is to generate evidence relevant to primary rural and remote primary health care (PHC) policy issues. To this end, staff have been actively engaged with policy-makers from Commonwealth, State and Territory governments, peak rural health workforce organisations, and regional and local health authorities.

Now almost half way through its program, the CREPRHC has already demonstrated its indispensable role in generating new evidence, translating its research into the policy and practice arenas, and working collaboratively with policy-makers, health service personnel, practitioners and consumers to evaluate and monitor the equitable provision of health care in rural and remote areas.

Working closely with a National Advisory Committee, the CREPRHC has published more than 20 peer-reviewed publications, made more than 25 keynote presentations and submissions to government, set a forum for policy-makers, practitioners and the research team, been awarded significant competitive research grants, and been invited to join a number of Advisory Reference and Working Groups of major national health workforce funding and practice organisations. Its dedicated Website (<http://www.crephc.org.au>) has become an important portal for researchers and interested stakeholders to link with the activities of the CRE.

This newsletter is the first of a regular series designed to provide relevant stakeholders with up-to-date information, and from which they can identify areas of mutual interest for engaging collaboratively in research and policy-making advice.

If you would like further information or to contribute to the CREPRHC newsletter, please contact Lisa Lavery on 03 5460 5077 or email lisa.lavery@monash.edu.

These newsletters will also be available on our CREPRHC website.

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Centre of Research Excellence
In Rural and Remote Primary Health Care

Newsletter of the

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Issue 2: February 2013

Editorial



John Humphrys

The two centimetre headline on page 3 of The Age on 3 January 2013 was "Larger wait, further travel for health services". As a Chief Investigator of a Centre of Research Excellence focusing on overcoming access barriers in relation to health services for Australians living in rural and remote areas, I read with interest. Also, the main focus of this article was on the impact of changes to the Medical Benefits Schedule that would force outer-suburban Victorians to travel further and wait longer for specialist medical services.

Without wishing to diminish the importance of access to services in our metropolitan areas, I pondered how residents of the many small rural and remote communities dispersed across Australia's 7.5 million square kilometres would react to such a policy. Health care workers required to service the needs of their populations, such as the Royal Flying Doctor Service (RFDS) and use of telehealth, are critical in delivering locally available care.

Access is much more than just geographical proximity to services. Access involves the availability of services, their proximity, their affordability, their appropriateness, and the ease with which they can be used at times of need. While the importance of these components varies according to different geographical contexts, no empirical research of this pattern of variation has been undertaken in Australia. Staff from the Centre of Research Excellence in Rural and Remote Primary Health Care (CREPRHC) have just surveyed five small rural communities in order to better understand how access impacts upon residents' patterns of utilisation of health services. On page 3 of this newsletter, CRE Post-doctoral researcher Bernadette Ward discusses some preliminary findings.

Equally important to understanding how access to health care impacts upon the lives of rural and remote Australians is the issue of what primary health care services should be available. CREPRHC staff in Alice Springs are leading a major study on how best to provide 'core' primary health care services. On page 3 Associate Professor Tim Canary outlines the extensive systematic review that has been undertaken to gather international evidence on core PHC services. In addition, a Delphi investigation is being conducted with leading rural health stakeholders in Australia.

Consequently, staff from the Broken Hill node of the CREPRHC are working closely with the RFDS to show how sustainable, high quality, accessible primary health care can be delivered across sparsely settled regions. Further details on this research led by Professor David Lyle are available on page 3.

The findings of this research on access to health services will provide vital inputs to work being undertaken by Matthew McGrail in developing a National Index of Access that can be used by policy-makers and health authorities in the planning of appropriate primary health care services for all non-metropolitan Australians. Working closely with staff from the Australian

Government Department of Health and Ageing, Matthew and I have been working to produce a better index of access as the basis for resource distribution that might overcome shortages associated with the existing classification.

In short, the CREPRHC is leading cutting-edge research in Australia to better understand the importance of access to primary health care as the basis for informing policies and the measures that are required to ensure equitable health outcomes for all Australians living in rural and remote areas.

Emerita Professor John Humphrys

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Centre of Research Excellence
In Rural and Remote Primary Health Care

Newsletter of the

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Issue 3: June 2013

Editorial



David Lyle

Debate about rural disadvantage has been part of public discourse in Australia for many years. Much has been written about the poorer health of rural Australians, and the contribution of a number of avoidable factors including inadequate access to healthcare and other socially mediated factors such as access to food, housing, income, and education. Despite a heightened political awareness of these issues since the early 1990s, progress towards achieving equity of access and outcomes in healthcare has been slow and difficult. The reality for many rural and remote communities is that they continue to experience difficulties in attracting and retaining an appropriate and adequately trained health and medical workforce. This situation is further exacerbated by the fact that health agencies and funding have been focused on the delivery of treatment and curative services, while many of the upstream determinants of indigenous, rural and remote health remain inadequately addressed.

However the news is not all bad. While many rural and remote communities are unlikely to be afforded the same level of access to the wide range of medical and health services available in metropolitan centres this should not be a major concern so long as rural and remote Australians have adequate access to appropriate high quality primary health care services.

Other reports on page 3, provide an update on the development of the CREPRHC Index of Access, which was featured in the Mission Review of Australian Government Health Workforce Programs, and highlight new work Melissa Lindeman is doing with the West Australian Centre for Health and Ageing on addressing the support needs of carers in remote Indigenous communities.

In this edition we also introduce some of our associate investigators and two of our fantastic research researchers, Fiona Tipping from Mildura and Susan Daly from Broken Hill.

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Experience tells us that no one service configuration is capable of meeting the health needs of each and every rural or remote community. Developing an effective and sustainable primary health care service needs to take account of the specific geographic, social, economic and cultural settings that defines the diversity of rural and remote communities and regions dispersed across more than 7.5 million square kilometres - home to more than seven million Australians. In this edition of the Newsletter, we highlight the work of Susan Thomas who has taken on a difficult challenge to establish an unambiguous and agreed position about what primary health care services rural and remote communities should expect to be delivered on the ground, and what support functions are necessary to ensure their sustainability. Susan has recruited a group of experts - clinicians, policy makers, academics and consumers to develop a consensus about what the essential primary health care services are for all Australians. She has also tasked them to define what specific services should be available in each rural and remote community based on their individual settings.



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Centre of Research Excellence
In Rural and Remote Primary Health Care

Newsletter of the

Centre of Research Excellence in Rural and Remote Primary Health Care

Issue 4: October 2013

Editorial



John Humphrys

On 7 September 2013, Australians voted for a change in government, and arguably with it some changes in the macro-policies that determine who gets what in our society. Unfortunately, changing governments does not necessarily remove the national fiscal constraints that limit the scope to bring about improved health care services. In short, the size of the 'pie' has not changed - the only option is to hope for a bigger slice!

So what will this mean for the health of rural and remote Australians?

The 1976 Hospitals and Health Commission Report identified the need for more integrated health services, and addressing workforce shortages, inadequate transport and indigenous health as the key issues. Today, despite numerous government rural health policies and programs, the same four factors continue to impede improvements to the health status of rural and remote Australians.

Undoubtedly, the overarching issue remains how to ensure equitable access to appropriate health services at times of need. Considerable rural health research has been undertaken suggesting wide-ranging solutions, many of which endorse rural health organisations' calls for more rural health funding. In response, Commonwealth, State and Territory governments of all political persuasions have introduced specific rural health policies and programs, often, however, without any rigorous evaluation of their effectiveness.

Currently, the Centre of Research Excellence in Rural and Remote Primary Health Care (CREPRHC) is undertaking landmark research examining how these persistent inequities can be overcome without more funding and developing a framework for evaluating how well policies and programs meet the goal of improving access to primary health care and thereby improving rural health outcomes. This research focuses on three key aspects of primary health care:

- Developing an 'Index of access' based on the need for and availability of first-line health care services - this provides an evidence-based classification to guide the distribution of scarce resources;
- Identifying what primary health care services should be available, and how best to provide them - benchmarking 'core' primary health care services, and which ones should be provided 'in situ' or by alternative modalities in different size communities; and
- Demonstrating which service models are most effective in delivering comprehensive primary health care - an evidence based evaluation framework is critical for monitoring program effectiveness.

Improving equity of access to health care does not necessarily require, and may not even result from more resources. Rather it requires the optimal allocation of existing resources to reflect geographic and socio-demographic differentiation in the pattern of needs.

The evidence generated by CREPRHC research is already helping to guide policies and resource allocation to better target those most in need. Moreover, this research will assist policy-makers to adopt a more systematic approach to rural and remote health care planning.

Paralleling this important research, the CREPRHC has developed a strong focus on knowledge exchange and engaging rural health stakeholders in its research. This extensive collaborative activity will help to ensure that evidence (rather than politics) underpins future rural health policies, resource allocation and the planning of health services.

This newsletter illustrates some of the research, knowledge exchange and capacity building activities being undertaken by the CREPRHC.

Emerita Professor John Humphrys

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State and Territory governments of all political persuasions have introduced specific rural health policies and programs, often, however, without any rigorous evaluation of their effectiveness.



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Centre of Research Excellence
in Rural and Remote
Primary Health Care

Newsletter of the Centre of Research Excellence in Rural and Remote Primary Health Care

Issue 5: February 2014

Editorial



John Wakeham

Benchmarking primary health care in rural and remote Australia

Good health is vital for all Australians – it affects our quality of life, life chances and workplace productivity, and it has a significant impact on national, state and territory health budgets. Good health is most easily ensured before problems of ill health arise – through health promotion, early intervention, and addressing the social determinants of health such as good nutrition, good housing, adequate transport, employment, work-life balance and so on. In short, an effective primary health care strategy is a crucial component of any rational health policy.

Although the costs of providing health care may seem high, it follows that expenditure on effective primary health care is one of the most important and equitable investments that governments can make. Improving primary health care access can decrease expensive preventable hospital admissions. However, exactly what governments and consumers are prepared to pay to maintain good health reflects current values, differences in political ideology, and government assessments of current and projected budgets.

Invariably a change of government brings with it a review of existing health expenditure in order to match it with the policy platform areas of

change the value of an effective primary health care strategy remains indisputable and does not change. What often does change, however, is the funding available to enable health care providers to ensure that strategies can be implemented and rigorously monitored in order to achieve their intended goals.

In the case of rural and remote areas, achieving effective primary health care is more difficult than in cities, due in large part to the higher costs associated with increasing remoteness and small populations spread across vast areas. Moreover, the impact of existing negative social determinants of health is already reflected in poorer rural and remote health outcomes. The current under-funding of rural and remote health services¹ is contributing to high personal and economic costs associated with avoidable ill-health and its impact on the hospital system.

Benchmarking the costs of providing effective care, primary health care services and their workforce requirements is one way in which governments can be informed of the investment required to deliver effective primary health care across non-metropolitan Australia. The CRERPHC has already published a highly accessed paper on core primary health care services. Currently it is undertaking complex fieldwork in order to ascertain appropriate benchmarks for primary health care services in different geographic localities which vary by remoteness.

Anyone concerned with the provision of health care cannot avoid the issue of costs. What is needed is rigorously derived empirical evidence about the funding required to underpin the delivery of effective health promotion, illness prevention, and early intervention. Primary health care services in order to avoid the very high costs incurred by avoidable hospital presentations at a later date.

Page 3 of this newsletter provides more detail of the Stream 2 research activity on benchmarking exemplary rural and remote primary health care services. In addition, because of the widespread

national interest in the activities of the CRERPHC, page 2 exemplifies its knowledge translation activity and provides examples of how staff are working to disseminate research findings and monitor their impact in the health services policy arena. Further information can always be obtained from the CRERPHC website.

John Wakeham
Professor John Wakeham
1.

Editorial



"A bient t and thank you"

This is the final newsletter of the Centre of Research Excellence in Rural and Remote Primary Health Care (CRERPHC). With the demise of the Primary Health Care Research, Evaluation and Development (PHCRED) Strategy and the consequent closure of the Australian Primary Health Care Research Institute (APHCRI), funding for the CRERPHC ends this year.

The funding provided to the CRERPHC by the Australian Government has enabled landmark research to be undertaken on key primary health care issues relating to workforce and service provision, and the effectiveness of primary health care in bringing about improved health outcomes for non-metropolitan Australians.

The CRERPHC has undoubtedly made a significant difference to understanding the factors underpinning the health issues characterising rural and remote Australia, generating more than one hundred peer-reviewed publications in national and international journals. It has been particularly active in translating these research findings into rural and remote health policy and practice, including several reviews and government strategies.

Importantly too, the CRERPHC has been extremely successful in research capacity

building, training both primary health care workers in research skills and evaluation, graduating PhD students, and assisting post-doctoral students to gain experience in undertaking policy-relevant work.

The long-term funding enabled researchers to investigate some of the most complex and seemingly intractable issues confronting the goal of providing equitable access to health care in rural and remote Australia. Academic researchers worked closely with rural and remote communities, Indigenous Australians, rural and remote health organisations, professional bodies, policy-makers and health service planners, and the Australian, State and Territory governments to investigate priority issues.

Many CRERPHC staff have provided advice to government enquiries and task-forces, assisted universities and health organisations to become more strategic in their education, training and research programs, and most importantly, advocated nationally for better rural and remote health outcomes.

During 2015, many stakeholders contacted the CRERPHC for assistance, to indicate the value of research undertaken, to seek assistance, to join in research collaborations, to participate in reference and advisory groups, and to speak at numerous conferences and workshops.

We would like to take this opportunity to express our sincere gratitude to all these stakeholders for their support and assistance throughout the five-years of activities comprising the CRERPHC research program.

Much more rural and remote health research is required, and CRERPHC researchers will continue to be active in undertaking it, albeit in a more piecemeal manner and without the capacity possible from maintaining a multi-institutional research centre that included staff from the Monash University School of Rural Health in Bendigo and Gippsland, the Flinders and Charles Darwin Universities Centre for

Rural Health in Alice Springs and Darwin, and the University of Sydney Department of Rural Health in Broken Hill.

The CRERPHC would like to thank the Australian Government for funding its activities over the past five years, particularly those bureaucrats and ministers who have taken so much interest and provided so much support to facilitate the research program. No doubt its legacy will be long-standing, since its outcomes demonstrate how indispensable rigorous research evidence is to generating relevant policies and programs instrumental in bringing about improved rural and remote health outcomes.

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APPENDIX 11: SUMMARY REPORT: EVALUATION OF THE CRERRPHC'S NEW NATIONAL INDEX OF ACCESS IN AUSTRALIA

January 2016

Introduction

To date, health service planning and resource allocation decisions of rural and remote health workforce have relied predominantly on geographical classifications defined by relative population size and/or remoteness – the Rural Remote and Metropolitan Areas Classification (RRMA), the Accessibility/Remoteness Index of Australia (ARIA), the Australian Standard Geographical Classification - Remoteness Area (ASGC-RA) and the recent Modified Monash Model (MMM) scale. These classifications were based largely on geography, with little regard for any meaningful measure of 'access' to health care services, an important concept which fundamentally determines the ease with which a household can obtain health care at times of need. One exception has been the use of District of Workforce Shortage (which uses actual health service data), but which has also been strongly criticised as being a crude measure of 'access' for a population.

In response, during its existence, the CRERRPHC developed a 'fit-for-purpose' classification for primary health workforce planning which measures population access - the *Index of Access*. This was specifically designed to provide an improved empirical basis for rural health service planning and resource allocation decisions. In 2015, the CRERRPHC undertook to evaluate and validate the Index of Access with feedback sought from key workforce and policy stakeholders and targeted expert individuals.

Evaluation method

Evaluation and validation of the Index of Access comes from both the internal CRERRPHC experts not associated with its development and key external stakeholders, with a focus on both the overall Index of Access and specific remote aspects within the Index of Access.

Whilst formulation of the Index of Access has evolved with regular assessment and feedback since its origin in 2005 to its completion in 2015, there remained concerns with some design aspects with the Index of Access because of the complexity of operationalising such an important concept across diverse geographical environments. Some of these are outlined within the CRERRPHC's Discussion Paper¹ and the main refereed paper in the *Geospatial Health* journal².

Copies of the Discussion Paper, *Geospatial Health* paper and high quality maps were circulated to 20 targeted stakeholders or leaders of policy, with an additional 7 individuals who had specific expertise in remote areas. All material was distributed initially as printed

¹ McGrail MR, Humphreys JS (2015). Development of a national Index of Access for primary health care in Australia: discussion paper: Monash University.

² McGrail MR & Humphreys JS (2015). Spatial access disparities to primary health care in rural and remote Australia, *Geospatial Health*, 10(2): 138-143.

documents, with follow-up emails where appropriate. Feedback was collected through follow-up phone discussions, email responses and formal written submissions.

At the time of this report, feedback had been received from 12/20 key stakeholders and 4/7 remote experts. Many stakeholders also indicated their intention to continue to provide feedback with the CRERRPHC members through 2016, as they begin to test its real-world policy and planning application.

Notably, Rural Health Workforce Australia and the seven state and territory workforce agencies combined to submit a 12-page response paper, attached as Appendix 11 to this report. The time and resources to producing this feedback demonstrates the importance attributed to our research for their organisation.

Key findings

Overall, stakeholders were impressed by the Index of Access and could see merit in its usage in more refined policy and planning decisions for rural health workforce resource allocation. There was solid support for the improvements of using a 2-state floating catchment methodology over existing methodologies, and in particular its ability to measure access with finer geographical granularity. The workforce agencies also agree that there is a strong role for a nationally consistent and reliable measure of access - the “innovative” Index of Access - to aid their decision making.

A common concern expressed was that the Index of Access should not be considered as the sole tool for guiding all service planning knowledge and resource decisions. Instead, it must be recognised that the Index of Access complements ‘local’ expertise (e.g. Primary Health Networks, local Rural Workforce Agencies), and that it is not intended to replace general classifications, such as the MMM, across all policies. A clearer statement of how the Index of Access complements other classifications like the MMM would also help.

There was both positive and negative acknowledgement of the complexity in the Index of Access methodology. Some stakeholders questioned the dynamic nature of the data, noting that there is significant cost required to update the Index of Access, and it is not clear how often data inputs need to be updated for it to be maintained as a useful long-term tool. Our recommendation is that 12 months would be the ideal balance between cost/effort whilst maintaining a useful and current tool.

Inclusion of health needs within the Index of Access is seen as a positive step, but there was recognition of the difficulty in defining needs. There was general support for the current approach used for measuring need within the Index of Access; however, this may not be appropriate nationally. Some NT stakeholders expressed concerns when applied to remote and high-Indigenous communities.

The AIHW, an organisation which has also utilised the 2SFCA method for some of its projects (but not exactly the same method as per the Index of Access), was concerned about whether the use of different catchment sizes by remoteness and applying a varying distance-decay function was appropriate. However, recent international literature supports the use of dynamic catchments that change in size relative to the volume of nearby alternative access options.

Remote-specific issues

A key drawback of the Index of Access in its current form is its reliance **on Medicare Benefits Schedule (MBS) billing** for measuring service availability. In particular, remote area nurses and other General Practitioners (GPs) employed directly by organisations (outside of MBS billing) are critical to ensure a more accurate representation of all services provided to

a location. GPs are not the first primary care provider for many remote communities, where remote areas nurses and allied health clinicians are common as well as the role of visiting providers including Royal Flying Doctor Services. There was wide acknowledgement that this issue is not easily addressed given that reliable and appropriate national datasets are not currently available.

One weakness of the Index of Access is its reliance on the road network and an assumption of car travel. Currently it does not capture the impact of poorer travel conditions across Australia, including: the impact of the 'wet' season in northern Australia leading to closure of roads and dependence on aircraft or helicopter travel, significant variations in the quality and nature of existing roads, increased dangers of wildlife and night travel, and the omission of public transport services.

Moreover, a higher volume of GP services in remote communities does not necessarily equate with increased primary health care access, because these GPs often provide non-PHC services that would elsewhere be filled by other specialists. Remote towns without access to specialist care can place a high burden on the resident GPs who deliver comprehensive medical care. Also, Indigenous health utilisation behaviour does not necessarily equate to having access where services are available. Many travel to alternative centres from the nearest service for a number of reasons. A high access score in small remote areas can dramatically change – thus it is important to understand the potential vulnerability of access for a population, not just their current access surface.

The concept of access includes several dimensions which are often difficult to capture. Remote access is commonly poorer due to higher staff turnover which leads to reduced continuity of care. This issue is currently not captured by the Index of Access which can only measure access at one point in time. Additionally, service models may be more limited by a reduced range of services being offered or limited after-hours services. Affordability is not included in the Index of Access nor are provider characteristics like gender; these omissions are potentially more critical in remote areas due to populations often having limited alternative options.

Potential future research

Most concerns of the Index of Access that may require further research evidence relate to its suitability for remote access measurement. In no particular order, access in remote areas is likely different for a number of reasons, most notably:

- Remote PHC services are delivered by a much wider range of clinicians and health professionals using a wider range of service models, which are often delivered 'regionally' rather than to a single town.
- Geography barriers for remote populations can vary, including, roads cut off by floods, poorer road conditions and lack of alternative transport.
- Indigenous populations may place different emphasis on access aspects, such as provider characteristics, service characteristics as well as their own health literacy.
- Remote populations are more itinerant, and many services are only intermittent or are delivered by a high turnover workforce.

Recommendations

1. Utilisation of the Index of Access is supported by rural health workforce stakeholders and policymakers and should be explored further in 2016.
2. The Index of Access should be viewed as a health service planning tool to complement current use of the Modified Monash classification.

3. The Index of Access will be most useful as a decision tool if it is updated annually.
4. Data holders should make available their key workforce datasets across the range of primary health care providers in order to improve the value of the Index of Access.
5. Further research may be required to improve suitability of the Index of Access for planning health services in remote communities.

APPENDIX 12: 12-PAGE RESPONSE PAPER BY RURAL HEALTH WORKFORCE AUSTRALIA AND THE SEVEN STATE AND TERRITORY WORKFORCE AGENCIES

See attached.

Development of a National Index of Access for
Primary Health Care in Australia
Response to Discussion Paper
January 2016



TABLE OF CONTENTS

1.	RURAL HEALTH WORKFORCE AUSTRALIA AND RURAL WORKFORCE AGENCIES	3
2.	BACKGROUND	5
2.1.	Development of a National Index of Access for Primary Health Care in Australia	5
2.2.	Request for Feedback	6
3.	RESPONSE TO THE DISCUSSION PAPER	7
3.1.	First thoughts about the Index of Access	7
3.2.	Is the Index of Access useful?	8
3.3.	What are the limitations of/ problems with the Index of Access?.....	9
3.3.1.	Measuring current service provision by GP Medicare billings	9
3.3.2.	Measuring access at a single point in time	10
3.3.3.	Issues relating to the calculation of health needs	10
3.4.	Scope for improvements to the Index of Access.....	11
3.5.	Conclusion.....	12

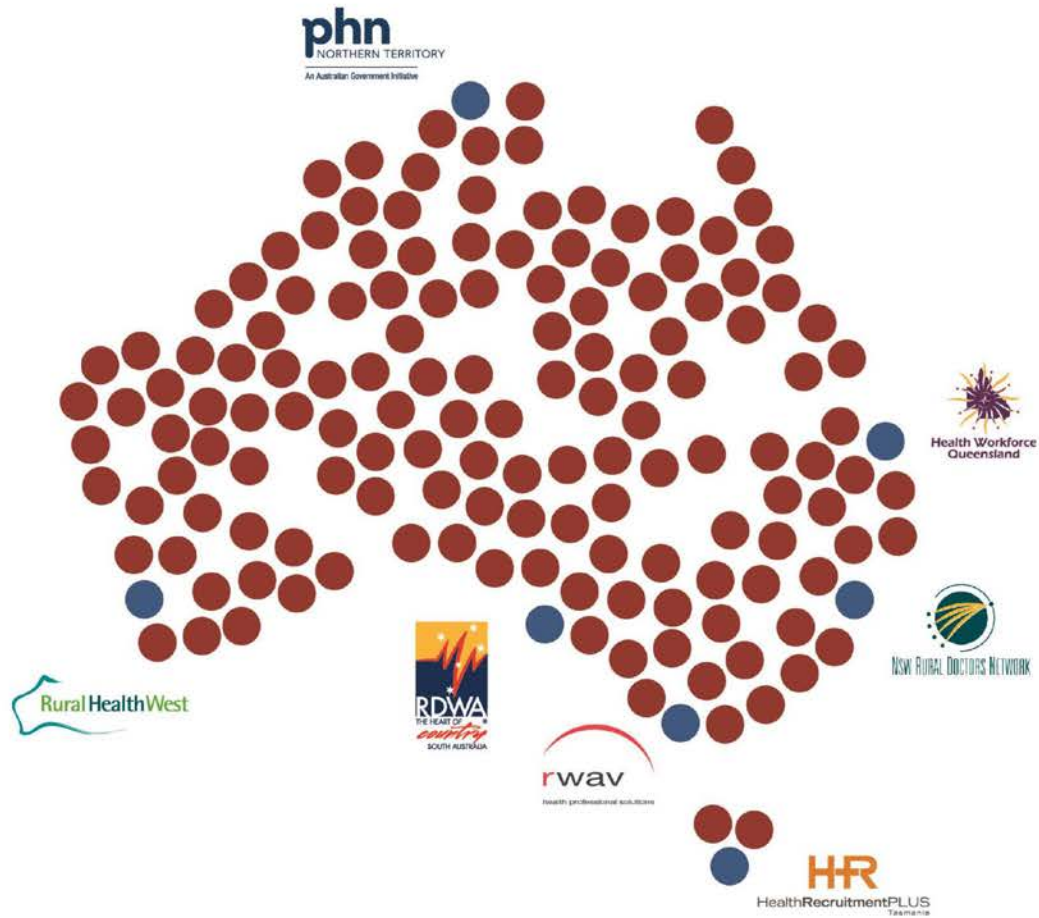
1. RURAL HEALTH WORKFORCE AUSTRALIA AND RURAL WORKFORCE AGENCIES

Rural Health Workforce Australia (RHWA) and the state and territory Rural Workforce Agencies (RWAs) are committed to making healthcare more accessible for the people of regional, rural and remote Australia by providing and retaining a skilled workforce that meets communities' health care needs. RHWA and RWAs are independent, not-for-profit organisations with extensive knowledge of and experience in supporting Australia's rural health workforce.

- Rural Health Workforce Australia
- NSW Rural Doctors Network
- Rural Workforce Agency Victoria
- Health Workforce Queensland
- Rural Doctors Workforce Agency (South Australia)
- Rural Health West (Western Australia)
- Northern Territory PHN
- Health Recruitment Plus (Tasmania)

RHWA and RWAs provide a wide range of services to regional, rural and remote health professionals, their practices, Aboriginal and Torres Strait Islander health services, dental and primary care services, including:

- attraction of a new workforce, marketing and the promotion of rural careers;
- recruitment;
- locum support;
- training and continuing professional development;
- personal and family support services for healthcare professionals;
- practice support services;
- community and health service development;
- research and policy advice; and
- communications and advocacy.



2. BACKGROUND

2.1. Development of a National Index of Access for Primary Health Care in Australia

To date, health authorities and organisations implementing rural and remote health workforce policies in Australia have predominantly based health service planning and resource allocation decisions on geographical classification systems. The three key classification systems that have been used are:

- Rural, Remote and Metropolitan Area (RRMA);
- Accessibility/ Remoteness Index of Australia (ARIA) classification; and
- Australian Standard Geographical Classification – Remoteness Area (ASGC-RA).

In response to criticism over many years that the use of these systems can lead to inequitable resource allocation and workforce planning decisions, the Centre for Research Excellence in Rural and Remote Primary Health Care (CRERRPHC) has developed a 'fit-for-purpose' classification system.

This new National Index of Access for Primary Health Care in Australia is a function of 3 core components:

- Availability – the availability of primary healthcare services to a community
- Proximity – the distance the community needs to travel to access primary healthcare services (a 'distance-decay function' has been included in the model to account for large, sparsely populated areas, ie remote)
- Health needs – the required volume of services of the community
(Following extensive analysis, health needs is determined in the model as a function of population size adjusted for the community's socioeconomic status (50% weighting), Indigenous population (25% weighting), and proportion of young (0-4 years) and old (65+ years) people in the community (25% weighting))

The Index of Access has been developed to provide a summary measure of access to primary health care from the patient's perspective, based on their place of residence, and provides a tool that can be used to guide service planning and resource allocation in order to increase equity of rural health outcomes.

It is noted that in 2015, the Department of Health adopted a new classification system - the Modified Monash Model - for use with many of its workforce programs, commencing with the General Practice Rural Incentives Program. Like other classifications systems such as RRMA,

ARIA or ASGC-RA, the MMM provides a summary measure *from the provider's perspective* – (“how rural or remote is the community where I work?”). Such systems are appropriate for directing workforce support and retention incentives, however the Index of Access is broader, also looking at the community's need and current levels of access to primary healthcare services.

2.2. Request for Feedback

The CRERRPHC is seeking stakeholder input into a proposed National Index of Access for Primary Health Care in Australia and RHWA appreciates the opportunity to respond to the Discussion Paper.

Specifically, the CRERRPHC has requested feedback on the following:

- 1) What are your first thoughts about the Index of Access?
- 2) Is it useful - if so, how?
- 3) What are its limitations or problems?
- 4) Do you see scope for its improvement?

In the following pages we detail our response to each of these in turn.

This submission has been prepared in response to a request from the CRERRPHC with regards to a proposed National Index of Access for Primary Health Care in Australia and represents the views and opinions of RHWA and Northern Territory PHN.

Should you require any further information in relation to this submission please contact Mr Greg Mundy, Chief Executive Officer via email at greg.mundy@rhwa.org.au or by telephone on 03 9860 4700.

3. RESPONSE TO THE DISCUSSION PAPER

3.1. First thoughts about the Index of Access

Overall, we concur that there is a role for a nationally consistent, reliable measure of access to primary health care to aid workforce planning and target resource allocation. The national Index of Access outlined in the Discussion Paper is acknowledged as the first 'fit-for-purpose' tool and is more appropriate for planning and prioritising resources than existing measures which focus on population size and/ or distance from larger centres.

In particular, the process by which the Index takes into account the community's level of health needs is innovative. Identifying and quantifying health needs in a consistent way is challenging and hence the considerable work in evaluating the impact of different measures discussed in the Discussion Paper makes a valuable contribution. The weighted formula proposed to comprise the 'health needs' component of the Index (50% socioeconomic status), 25% Indigenous population, 25% young/ old population) provides a relatively straightforward measure of the concept.

A further innovative component of the Index is the use of the two-step floating catchment area methodology and the inclusion of a distance-decay function to measure access to primary healthcare. This overcomes issues with some other measures of access which are not well suited to Australia's sparsely populated rural and remote communities where catchment areas for health services can be very large.

We are naturally supportive of any work that aims to improve workforce planning and the targeting of healthcare resources in rural and remote areas and believe the Index of Access is a major step forward in this area. It represents a move away from purely geographical classification systems through its inclusion of both health needs and current service provision levels. The Index is well-researched, utilises accurate and nationally consistent Australian data, and has been specifically developed with rural and remote communities in mind.

The major drawback of the Index of Access at present is in the way in which it accounts for the *availability* of current primary health care services. In essence, access to primary health care services is measured solely through GPs' Medicare-billed services (and some Remote Area Nurse services in remote locations). While the reasons for this are well-explained and it is acknowledged that reliable national datasets for other healthcare professionals are at present unavailable, this issue limits the potential usefulness of the Index as a workforce planning and resource allocation tool.

To this end, it is noted that the Discussion Paper does not include a definition of primary health care, the addition of which may assist in defining the parameters of health care service access that the Index is measuring.

3.2. Is the Index of Access useful?

The Index of Access is of potential value for organisations such as ours in

- (1) planning services;
- (2) targeting services and incentives; and
- (3) measuring the impact of interventions over time.

Given its limitations however (discussed below at 3.3), the Index would at this stage only be of value as a 'starting reference point' in the planning or targeting of services. For example, the Index could be used to identify potential communities of higher need, however this would then be reviewed by Rural Workforce Agencies who have detailed 'on-the-ground' knowledge of the communities within their jurisdiction.

As the Discussion Paper acknowledges, it would of course be preferable that the Index of Access take account of all the primary health care services available to a community – including non-GP medical specialists, nurses and allied health practitioners.

At present we would not support the use of the Index of Access as the *sole* determinant of a community's need for health care services or as the only consideration in prioritising resources. As will be demonstrated, there are examples of communities in the Discussion Paper that have a relatively high Index of Access 'score', however this is due primarily to the way in which the Index assesses access rather than the community not having a need for primary health care services.

The Northern Territory PHN indicated that they have already undertaken a comprehensive needs assessment for their jurisdiction, triangulating data from surveys, stakeholder consultations and existing population demographic and health statistics. Northern Territory PHN use this analysis as the foundation for their workforce planning and resource prioritisation.

With regards to using the Index of Access to measure the impact of interventions over time, it is assumed that changes in the Index would most likely reflect increases in GP Medicare-billed

services (in the absence of any major demographic changes in the community). In this context, it would be useful to know:

- the ease with which the Index can be updated;
- how often the Index would be updated; and
- who would be responsible for updating it (and the associated cost).

3.3. What are the limitations of/ problems with the Index of Access?

3.3.1. Measuring current service provision by GP Medicare billings

As has been noted, the key limitation of the Index of Access is that the availability of primary health care services is measured only from the perspective of GP Medicare billings. While it is acknowledged that this represents the only reliable, accurate and nationally consistent data-set at present, this relatively narrow definition of primary health care is problematic for a variety of reasons.

GP Medicare billings data does not take account of primary health services provided by:

- medical practitioners (including GPs) outside of Medicare (such as the Royal Flying Doctors Service, Visiting Medical Officers at regional hospitals or doctors employed by state government health services); or
- non-GP medical specialists, nurses and allied health professionals.

This is a particularly relevant issue for rural and remote areas where a nurse or allied health professional is often the first point of contact. Northern Territory PHN advise that nurses and Aboriginal Health Workers play a large role in primary care in rural and remote Northern Territory communities. In this instance, the Index of Access may potentially *under-estimate* a community's level of current service provision due to a low level of GP Medicare billing.

On the other hand, the Index of Access could potentially *over-estimate* a community's level of service provision where there is a relatively high level of GP Medicare billings. For example, in many rural and remote communities GPs often provide other medical specialist care because there is relatively limited access to other specialists (such as geriatricians or oncologists). Hence a town may have high a relative high level of GP Medicare billings but this is because GPs are doing things that other medical specialists would be doing in larger centres, including additional roles in public health and linkages between community based primary health care and hospital services.

Although non-GP medical specialists do not usually provide primary care services, their absence in a community can impact on the access to primary care from GPs and others. Northern Territory PHN provided the example of East Arnhem Land to illustrate this point. In the Discussion Paper, Nhulunbuy receives a relatively high Index of Access (6.86E-04) – the highest of the 10 Northern Territory community examples in the paper.

However, Northern Territory PHN believe that contributing factors to this score may include limited access to specialists in East Arnhem Land, with GPs providing many of the services that would be provided by specialists such as dermatologists in urban and larger regional areas. Despite a relatively high Index of Access score, Northern Territory PHN's needs analysis and other data highlights that the people of Nhulunbuy and East Arnhem Land have identified gaps to accessing primary health care services.

3.3.2. Measuring access at a single point in time

A further issue, common to any measure of access taken at a single point in time, is that circumstances can change quickly - particularly in a community with only one or two GPs. For example, a GP can become seriously ill or take unplanned extended leave – suddenly reducing current service provision. Alternatively, a community's health needs may suddenly increase due to a natural disaster such as bushfire, as was the case in many small Victorian communities after the 2009 Black Saturday bushfires.

As such, it is envisaged that any measure of access used for workforce planning and health service resource allocation must be incorporated into a flexible process that permits:

- frequent and ongoing review of communities' needs and levels of service provision; and
- the ability to recognise and respond promptly to sudden and unexpected changes in either levels of service provision or health needs.

3.3.3. Issues relating to the calculation of health needs

With regards to the weighted formula that comprises the 'health needs' component of the Index, the following issues are noted:

- socioeconomic status at postcode level can mask significant variations within a community – there can be very wealthy and very poor people living in the same postcode and as such people with very high health needs will not be highlighted in an overall 'well-off' community

- in taking into account the proportion of a population aged over 65 years, it should be recognised that the Indigenous population is dramatically under-represented in this age group

3.4. Scope for improvements to the Index of Access

The key improvement suggested for the Index of Access is to broaden the way in which current primary care health service is imputed into the model, recognising of course that at present the only primary health care services for which reliable and consistent national data are available are those provided by GPs.

In time however, it is hoped that data for other medical specialists, nurses and the 11 AHPRA-registered allied health professions could be incorporated. Ways of accounting for services provided by GPs that are not billed to Medicare could also be investigated. Potential sources of data may include:

- hospitals/ hospital networks;
- state and local government health services;
- ambulance services;
- Royal Flying Doctor Service; and
- district nursing services.

We note that some previous work in the development of the Index of Access was undertaken in Victoria and recommend that further trialling of this tool be undertaken in conjunction with Rural Workforce Agencies and/ or Primary Health Networks in other jurisdictions regarding its utility and value in each of the three core envisaged usages of:

- workforce planning;
- targeting and allocation of resources and incentives; and
- assessing the impact of interventions and incentives.

3.5. Conclusion

Overall, the Index of Access represents a significant advance on existing classification systems used as the basis of current rural and remote health workforce planning and resource/ incentive allocation decisions. The Index has been developed through thorough research and offers the specific benefits of:

- the use of the two-step floating catchment area methodology and inclusion of a distance-decay function; and
- the incorporation of a community's health needs in the determination of an overall access 'score'.

At present it is recognised that in determining a community's present level of primary health care service provision, the only reliable and consistent national data are for services provided by GPs. Naturally however, primary health care services, particularly in rural and remote areas, are often provided by health professionals other than GPs.

As such, the Index would not be of use as the *sole* measure of a community's need for primary health care services or as the only consideration in targeting resources or incentives. However, current workforce planning is rarely based on a single measure or classification system and the Index of Access is likely to offer an improvement over other classification systems currently used (principally ASGC-RA).

We look forward to continuing discussions with the CRERRPHC to explore how the Index of Access can be used (and potentially trialled) in workforce planning and how it compares with currently used geographic classification systems as a component of multi-faceted planning and resource allocation processes.