Research Protocol: Research training – long term outcomes, impacts and skill development

Project summary

Rationale: The majority of research skill and capacity building activities examine short-term outcomes, following up participants after one or two years. Capacity building in health research requires a long-term view to understand the longer term outcomes. The Rural Research Capacity Building Program (RRCBP), delivered by NSW Health offers an opportunity to examine graduates of the Program who completed their research five or more years ago. This represents a unique opportunity to examine researchers' development, application of skills they developed and the long-term outcomes of the projects undertaken through the RRCBP.

Objectives: This study will examine long-term outcomes arising from individuals receiving workplace-based training in research skills and real-world experience of conducting research in a rural area.

These outcomes will be aligned with Cooke's capacity development framework in that skill development at the individual level, and perceptions of changes at the team, organisational and supraorganisational levels will be examined. Graduates will also be asked about the nature of skills developed during the Program. Specifically the study will examine:

- What role does research play in RRCBP graduates' career-to-date? How has undertaking research influenced graduates' careers?
- What longer-term changes for RRCBP graduates or the organisation do they see as a result of undertaking research training? How does individual staff completing research training (and research) change organisations?
- What research specific skills have RRCBP graduates used since undertaking research training?
- What transferable or "soft" skills have RRCBP graduates developed as a result of undertaking research education and research?

Methods: This qualitative study is underpinned by a critical realist perspective. Graduates of the Rural Research Capacity Building Program from the 2006 to 2015 cohorts will be approached as they have received research training five or more years ago. A stratified sampling approach will ensure a range of experiences are included. Participants will be invited to attend either a virtual interview or focus group.

The use of critical realist framework allows exploration of the underlying mechanisms that lead to change at different levels such as individual or organisational.

Timeframe: Interviews/focus groups to be conducted in a period from September to November 2020, with analysis and project report due for completion by December 2020.

Expected outcomes: information from this study will assist managers and educators in group research to build an understanding of the long-term impact of investment in research education. The realist approach allows for an understanding of 'what works for who in what circumstance', thus allowing organisations make informed decisions about investment in this education strategy for the individuals and organisations alike.

The project will produce a comprehensive report back to the Health Education and Training Institute which will benefit that organisation in planning for research skill development education. Peer reviewed

Schmidt D, *et al. BMJ Open* 2022; 12:e065972. doi: 10.1136/bmjopen-2022-065972

publication will be sought and that publication will form a chapter in the researcher's PhD thesis.

General information

Research Protocol: Research training – long term outcomes, impacts and skill development

Name and address of the sponsor/funder: This study is conducted as part of a PhD program through The School of Public Health, Faculty of Medicine, University of Sydney

Name and title of the investigator(s):

David Schmidt. PhD Candidate, School of Public Health, Faculty of Medicine, University of Sydney. Senior Program Manager – Rural Research HETI, 5 Panamuna Rd Tathra NSW 2550. Ph. +61 4 22503681. David.schmidt@health.nsw.gov.au

Dr Kerith Duncanson Rural Research Education Manager, HETI Rural and Remote Portfolio 0428848264 | kerith.duncanson@health.nsw.gov.au

Professor David Lyle. Head of Department, Broken Hill University Department of Rural Health, The University of Sydney. Corrindah Court, PO Box 457, Broken Hill NSW 2880. Ph. +61 8 8080 1237. David.lyle@health.nsw.gov.au

Dr Emma Webster. Senior Lecturer Rural Research, School of Rural Health, Sydney Medical School, The University of Sydney, Ph. +61 2 5809 9423. emma.webster@sydney.edu.au

Dr Emily Saurman. Research Fellow-Rural Health, Broken Hill University Department of Rural Health, Faculty of Medicine and Health, University of Sydney, Corrindah Court, Morgan Street, PO BOX 457 Broken Hill NSW 2880 Australia T: +61 8 8080 1206. emily.saurman@sydney.edu.au

Rationale

Research capacity building has been a desired goal of rural health organisations (Dunbar, 2010). Research in rural areas presents its own set of challenges and a need for specific rural training has been identified (Taylor, Hughes, Petkov, & Williams, 2005). Several programs have been undertaken within the rural health workspace to improve research capacity including scholarships, training in place, fellowships, participatory approaches and capacity building endeavours (Bailey, Veitch, Crossland, & Preston, 2006; Birden, 2007; Fraser, Hawkins, Alexander, Robertson, & Fragar, 2006; Gausia, Thompson, Lindeman, Brown, & Perkins, 2015; Grundy & Johnston, 2003; McIntyre et al., 2007; Webster, Thomas, Ong, & Cutler, 2011).

Recent literature has called for embedded researchers within rural health organisations (Moran et al., 2019). Whilst this idea is consistent with known research capacity development principles (Cooke, Gardois, & Booth, 2018), there is very little information on long term outcomes of research capacity building endeavours, with most programs typically funded in the short term and with short

term follow up (Ramkalawan & Dieppe, 2008). The metrics used to determine success in programs of this type are more complex and this often leads to success in fields like health services research being underreported (Fradgley et al., 2020).

One program that was established to address a perceived lack of rural research capacity is the Rural Research Capacity Building Program, established in 2006 to improve research experience and capability in rural New South Wales. The program has demonstrated efficacy in increasing self-reported research experience (D. D. Schmidt, Webster, & Duncanson, 2019), improving publication rates (Duncanson, Webster, & Schmidt, 2018), retaining researchers within the program (D. Schmidt, Robinson, & Webster, 2014) and building research capacity (Webster et al., 2011). The program is a rare example of a program which has received ongoing funding, as similar programs have been discontinued, despite evidence of their efficacy (Cameron et al., 2013; D. D. Schmidt & Kirby, 2016). Internal evaluation findings also indicate that RRCBP candidature can be transformative personally or professionally beyond the field of research.

This study will be used to explore what value research brings to the individual and organisation in the longer term.

Study goals and objectives

To understand:

- What role does research play in RRCBP graduates' career-to-date? How has undertaking research influenced graduates' careers?
- What longer-term changes for RRCBP graduates or the organisation do they see as a result of undertaking research training? How does individual staff completing research training (and research) change organisations?
- Has the system changed for supporting clinicians who want to undertake research? Who has led change? Have they been an active part of that change?
- What research specific skills have RRCBP graduates used since undertaking research training?
- What transferable or "soft" skills have RRCBP graduates developed as a result of undertaking research education and research?

Study Design

This qualitative study will be conducted using a critical realist underpinning. Realist approaches have been described as being able to uncover what works for whom in what circumstance (Ajjawi, Crampton, & Rees, 2018; Cooke et al., 2018). The use of critical realism is intended to provide an understanding of the context of research skill development and accompanying research experience,

specifically any changes that may have occurred for the individual or their workplace. A realist analysis will then explore the mechanisms underlying these changes.

Participants

Graduates of the Rural Research Capacity Building Program from the 2006 to 2015 cohorts would be approached. All graduates are experienced health professionals with intimate knowledge of the program and its outcomes, with five or more years from their initial research training. Program coordinators maintain an active list of graduates contact details.

Graduates who have requested that they be removed from the program's regular contact list will not be approached.

Methods

Sampling strategy

There are approximately 160 people in the graduate contact list who would be eligible to participate. Graduates on the contact list will be divided into three groups; those who are known to be working in research-related roles or are research active within their existing roles, those who are known to be supportive of research but not active in research per se, and those who have not maintained an active presence in research or whose research activities are not known.

To ensure an even spread of recent and less recent graduates the groups will be further stratified into 2006-2010 cohorts, and 2011-2015 cohorts, this creating 6 subgroups.

Each subgroup will be randomly ordered by an administrative staff member working for HETI (Lynette Gillies) and the first five names in each group will receive an invitation email. Thus 30 people will initially receive an invitation email. In the event that a subgroup has limited or no uptake the next 5 names on the list will be approached until the subgroup is represented.

Data Collection

Potential participants will receive an email invitation from one of the administrative staff working for HETI (Lynette Gillies) inviting them to attend a focus group to be conducted virtually via web conferencing (Zoom). The email will also include a consent form [Appendix 1] and participant information sheet [Appendix 2]. Focus groups are intended to stimulate discussion and allow ideas to develop amongst participants. In the event that an individual would like to participate but is uncomfortable in a group environment or is unable to attend at the agreed time of focus group an interview will be offered at a convenient time via telephone as required. Focus groups and interviews will be conducted by Dr Emily Saurman who is adept at facilitating group discussion via web conference and has experience facilitating focus groups for research. Participants are also likely to be comfortable with webconferencing as virtual sessions were run throughout the RRCBP. Potential participants will be sent a reminder email 2 weeks after the initial invitation.

Schmidt D, *et al. BMJ Open* 2022; 12:e065972. doi: 10.1136/bmjopen-2022-065972

Participants will indicate their consent to participate in interviews or focus group by signing and returning a consent form [Appendix 1] to the interviewer (ES) electronically. In the case of telephone interviews, consent can be recorded prior to the commencement of the interview in a separate sound file to ensure anonymity if the participant prefers.

It is anticipated that 2-4 focus groups and up to 10 interviews will be held, thus allowing a mix of experiences. It is anticipated that focus groups will contain a mix of the subgroups as outlined above. As graduates are known to the coordinators there will be opportunity to avoid known personality conflicts within the makeup of the focus groups – any known conflicts will be communicated to the interviewer (ES) who will know the names of participants.

Focus groups and interviews will be conducted by Emily Saurman. Dr Saurman is familiar with the program, having provided mentoring and education at research workshops since 2012. Contact with candidates outside of these workshops has been limited and Dr Saurman is independent of program management.

All focus groups and interviews will be digitally recorded. The focus group / interview facilitator will take field notes during or immediately after the conclusion of the interview or focus group. Focus groups / interviews questions can be found in Appendix 4. Participants will be offered the opportunity to request a copy of the transcript from the interview or focus group if desired.

After the first focus group a debrief between the interview and lead researcher will be conducted to explore lines of questioning and discuss any changes required to the focus group schedule. Subsequent debriefs will be held as required.

Interviews and focus group recordings will be transcribed by a professional transcription company with experience in health research, DAATS. This external company undertaking transcription will be bound by a confidentiality agreement.

Recordings will be stored electronically on a password-protected network drive accessible to the interviewer (ES) until the transcripts have been checked for accuracy by the interviewer, after which the audio files will be deleted. Hard copies of any consent forms will be forwarded to the lead researcher in a sealed envelope and stored in a lockable filing cabinet at the lead researcher's office at South East Regional Hospital, Virginia Dr, Bega NSW 2550.

All data will be stored for a period of 5 years then deleted or shredded. In the event of the lead researcher leaving employment within Health Education and Training Institute, responsibility for storage and destruction of the research material will reside with the second named researcher or manager of the same if both these researchers have left employment with the organisation.

Data Analysis

Qualitative analysis will be completed by the lead researcher (DS) using the cut-and-paste method of coding and thematic development (Pope, Ziebland, & Mays, 2000). The interviewer (ES) and two other researchers (KD and EW) will independently read several transcripts in view of the derived

themes to ensure veracity of themes. Any discrepancies will be resolved by a discussion of the research team. The framework for capacity building proposed by Cooke (2005) will provide a theory to inform analysis, with the structural levels of individual, team, organisation and supra-organisational considered when organising and assessing outcomes. Outcomes will also be considered in terms of research development and other concurrent or incidental skill development. Themes will be refined through an iterative process of discussion and rereading texts. When all team members reach agreement on the final iteration analysis will be deemed complete.

Expected Outcomes of the Study

At the conclusion of this study the authors will produce a report/manuscript detailing the long-term outcomes described by graduates of the Rural Research Capacity Building Program and an exploration of the mechanisms that produced those outcomes. Information from this study will be of interest for those investing in research training, in particular HETI and the rural universities.

Dissemination of Results and Publication Policy

The report arising from this study will be provided to the executive of HETI. One or two manuscripts describing the study and its outcomes will be submitted for publication to either a rural health-oriented journal such as the Australian Journal of Rural Health, or a health policy journal such as Public Health Research and Practice or the Australian Health Review.

Presentation of the research findings will target a rural health audience through an appropriate conference, such as the NSW Rural Health and Research Congress or the National Rural Health Conference.

The lead researcher (DS) will be primary author on all reports, publications and presentations arising from this study. Co-authors will be presented in order of contribution to the final report, manuscript or presentation which may be different to the amount of contribution to the study itself and may vary between report, manuscript or presentation. All co-authors will satisfy the ICMJE Criteria for Authorship as described at http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html before being considered for co-authorship.

The published paper or papers arising from this study will be used as a chapter in the lead researcher's doctoral thesis as part of the requirements of fulfilling a PhD. In the event that a manuscript is not accepted for publication in any journal the lead researcher reserves the right to include the unpublished manuscript as a chapter in the doctoral thesis.

Duration of the Project

8 months from commencement of data collection to finalisation of report.

Problems Anticipated

Potential problems are outlined in the table below, along with suggested management strategies.

Issue	Solutions
Recruitment – some graduates may have changed employment or be very time poor or may be embarrassed that they have not continued research	Plenty of notice, convenience of interview time and place (e.g. zoom). PIS and consent explain that ongoing research not a requirement – seeking a range of perspectives Ability to attend interview rather than focus group if concerned re lack of research of activity
Difficulty in conceptualising applications of RRCBP experience beyond research	Provide examples and prompt as part of interview schedule – refer to elements of research spider tool
DS and KD are past program participants	Clarification and articulation of how this experience has influenced our perspective
DL and EW have involvement with the program since its inception	Clarification and articulation of how this experience has influenced our perspective

Project Management

David Schmidt. Lead researcher.
Responsible for research concept, design, protocol, ethics submission and liaison with the ethics committee, governance submissions within NSW Health as required, data collection, data management, data analysis, report writing and manuscript creation for peer-reviewed journal submissions.

Dr Kerith Duncanson. Co-researcher.
Responsible for research design, protocol, ethics submission and liaison with the ethics committee, governance submissions within NSW Health as required, data collection, data management, data analysis, report writing and manuscript creation for peer-reviewed journal submissions.

Professor David Lyle. Co-researcher and supervisor.
Responsible for research supervision, input into research design, protocol and ethics submissions. Advice on data analysis and report writing. Input into manuscript for peer-reviewed journal submissions.

Dr Emma Webster. Co-researcher and supervisor.
Responsible for research supervision, input into research design, protocol and ethics submissions. Input into data analysis and checking of codes and themes. Input into report writing and manuscript for peer-reviewed journal submissions.

Dr Emily Saurman. Co-researcher

Responsible for input into research design, protocol and ethics submission. Responsible for organising and conducting focus groups and interview, data management and assisting with code and theme verification. Input into report writing and manuscript for peer-reviewed journal submissions.

Ethics

The project will be submitted to the Hunter New England Human Ethics Committee, with governance approval requested from HETI via REGIS.

Potential ethical concerns for this project include:

Potential issue	**Strategy**
Perception of power relationship	As graduates, potential participants are not in an unequal power relationship – they are in a peer relationship. Arm's length recruitment strategy.
Perceived coercion or feeling pressure to participate	Sampling process ensures anonymity for those who decline. Initial invitation from independent administrative staff member Focus groups and interviews conducted an independent researcher.

Informed Consent Forms

See Appendices 1-3 for written consent form, PIS and email invitation to participants.

Budget

Costs for this study are as follows:

Researchers' time. The lead researcher is completing this study as part of a PhD being completed through the University of Sydney and is also employed in a research capacity with HETI. Co-researchers have dedicated time allocated to research and research supervision within their work roles.

Software and internet access. The lead researcher has all relevant software and hardware which was purchased specifically for use within his PhD studies.

Transcription costs. The research team have access to an existing relationship with DAATS via University of Sydney. Funding for transcribing has been offered by Health Education and Training Institute.

No additional funds will be requested for this study from HETI.

Links to other projects

This study forms part of a doctoral project for the lead researcher. A map showing the relationship of this study to the other components is found in Appendix 4.

Curriculum Vitae of investigators

See Appendix 5 for all investigator CVs.

Other research activities of the investigators

This study forms part of a doctoral project for the lead researcher. A map showing the relationship of this study to the other components is found in Appendix 4.

Financing and Insurance

Insurance for all PhD activities undertaken by the lead researcher is covered as part of the standard coverage of all student undertaking doctoral level studies at the University of Sydney.

References

Ajjawi, R., Crampton, P. E. S., & Rees, C. E. (2018). What really matters for successful research environments? A realist synthesis. *Medical Education, 52*(9), 936-950.

Bailey, J., Veitch, C., Crossland, L., & Preston, R. (2006). Developing research capacity building for Aboriginal & Torres Strait Islander health workers in health service settings. *Rural and remote health, 6*(4), 556.

Birden, H. H. (2007). The researcher development program: how to extend the involvement of Australian general practitioners in research? *Rural and Remote Health, 7*(3), 39.33KB.

Cameron, H. E., Boreland, F. T., Morris, J. R., Lyle, D. M., Perkins, D. A., Magin, P. J., . . . Zwar, N. A. (2013). New South Wales and Australian Capital Territory Researcher Development Program 2005-07: modest investment, considerable outcomes. *Australian Journal of Primary Health, 19*(1), 59-67. doi:10.1071/PY11155

Cooke, J., Gardois, P., & Booth, A. (2018). Uncovering the mechanisms of research capacity development in health and social care: a realist synthesis. *Health Research Policy and Systems, 16*(1), 93. doi:10.1186/s12961-018-0363-4

Dunbar, J. A. (2010). Building capacity for rural and remote research. *Australian Journal of Rural Health, 18*(4), 133. doi:10.1111/j.1440-1584.2010.01146.x

Duncanson, K., Webster, E. L., & Schmidt, D. D. (2018). Impact of a remotely delivered, writing for publication program on publication outcomes of novice researchers. *Rural and remote health, 18*(2).

Fradgley, E. A., Karnon, J., Roach, D., Harding, K., Wilkinson-Meyers, L., Chojenta, C., . . . Paul, C. L. (2020). Taking the pulse of the health services research community: a cross-sectional survey of research

impact, barriers and support. *Australian Health Review, 44*(1), 160-167. doi:https://doi.org/10.1071/AH18213

Fraser, J. D., Hawkins, A., Alexander, C., Robertson, C., & Fragar, L. (2006). The impact of the Research Methods Support Structure on research capacity in rural New South Wales. *Australian Health Review, 30*(4), 427-434. doi:10.1071/AH060427

Gausia, K. M. P., Thompson, S. C. F. P., Lindeman, M. A. B. A. P., Brown, L. J. B. P., & Perkins, D. B. A. P. (2015). Contribution of university departments of rural health to rural health research: An analysis of outputs. *Australian Journal of Rural Health, 23*(2), 101-106.

Grundy, J., & Johnston, F. (2003). Building research capacity in primary health care settings in the Northern Territory. *Australian Journal of Primary Health, 9*(1), 9-17.

McIntyre, E., Saltman, D., Traynor, V., Sims, J., Richards, J., & Dollard, J. (2007). Building research capacity in Australian departments of general practice and rural health: a document review of annual reports. *Primary Health Care Research & Development, 8*(1), 3-11.

Moran, A., Haines, H., Raschke, N., Schmidt, D., Koschel, A., Stephens, A., . . . Nancarrow, S. (2019). Mind the gap: is it time to invest in embedded researchers in regional, rural and remote health services to address health outcome discrepancies for those living in rural, remote and regional areas? *Australian journal of primary health, 25*(2), 104-107.

Pope, C., Ziebland, S., & Mays, N. (2000). Analysing qualitative data. *British Medical Journal, 320*(7227), 114-116.

Ramkalawan, T., & Dieppe, P. (2008). Research capacity development and training. *Journal of Health Services Research and Policy, 13*(Suppl 3), 6-11.

Schmidt, D., Robinson, K., & Webster, E. (2014). Factors influencing attrition from a researcher training program. *International Journal for Researcher Development, 5*(1), 56-67.

Schmidt, D. D., & Kirby, S. (2016). A modular approach to rural and remote research education: a project report. *Rural Remote Health, 16*(1), 3609.

Schmidt, D. D., Webster, E., & Duncanson, K. (2019). Building research experience: Impact of a novice researcher development program for rural health workers. *Aust J Rural Health*. doi:10.1111/ajr.12520

Taylor, J., Hughes, C., Petkov, J., & Williams, M. (2005). Unique issues in research and evaluation in rural and remote locations: Is there a place for specific research training? *Rural and remote health, 5*(2), 351-362.

Webster, E., Thomas, M., Ong, N., & Cutler, L. (2011). Rural research capacity building program: capacity building outcomes. *Australian Journal of Primary Health, 17*(1), 107-113.

Appendix 1: Consent form

THE UNIVERSITY OF SYDNEY

ABN 15 211 513 464

School of Public Health
Faculty of Medicine

PO Box 173, Bega, NSW 2550
AUSTRALIA
Telephone: +61 4 2250 3681
Email: dsch5166@uni.sydney.edu.au
Web: http://www.sydney.edu.au/

Research training – long term outcomes, impacts and skill development

CONSENT FORM

I, ... [PRINT NAME], consent to participating in this research study.

In giving my consent I state that:

- ✓ I understand the purpose of the study and any risks/benefits involved.
- ✓ Joining this study involves participating in an interview or focus group (face to face or webconference) for approximately one hour
- ✓ I have read the Information Statement and have been able to discuss the study with the researchers if I wished to do so.
- ✓ The researchers have answered any questions that I had about the study and I am happy with the answers.
- ✓ I understand that being in this study is completely voluntary. My decision whether to take part in the study will not affect my relationship with Health Education And Training Institute, my LHD, the researchers or anyone else at the University of Sydney now or in the future.
- ✓ I understand that I am able to withdraw from the study and do not need to provide reason for doing so.
- ✓ I understand that sensitive information collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to. I understand that this sensitive information will only be told to others with my permission, except as required by law.
- ✓ I understand that the results of this study may be published, and that these publications will not contain any identifiable information about the organisation or any individual within the organisation.
- ✓ I understand that I will receive a report summarising the study's findings independent of any publication.

.....
Signature

....
PRINT name **Date**

Consent form: Research training – long term outcomes, impacts and skill development Page 1 of 1
Version 1 [07/02/2020]

Appendix 2: participant information sheet

Long term
outcomes of researc

Schmidt D, *et al. BMJ Open* 2022; 12:e065972. doi: 10.1136/bmjopen-2022-065972

Appendix 3: Email invitation to participants

Dear [insert name]

We are writing to invite you to participate in a research project exploring the long term outcomes of research training. As a graduate of the Rural Research Capacity Building Program, we believe that you will have important insights in this topic.

Please note that we are looking to hear about a range of experiences. You do NOT have to be active in research to participate in this study.

Please find attached a Participant Information Sheet which explains more about the project and what is involved. You will also find attached a consent form via which you may indicate your willingness to participate in this study.

If you consent to participating in the study, please sign the attached consent form and return to Dr Emily Saurman via email at Emily.Saurman@health.nsw.gov.au, or if you wish you can provide verbal consent which will be audio recorded.

If you do not consent to participating in this study, you do not have to do anything. However if you are unable to participate and want to let us know, please reply to Lynette Gillies so that another person may be offered the option of participating. You do not have to provide any reasons for wishing not to participate.

If you would like to know more about this study, please contact the lead researcher David Schmidt. PhD Candidate, School of Public Health, Faculty of Medicine, University of Sydney. Ph. +61 4 22503681. Dsch5166@uni.sydney.edu.au or any of the research team listed on the information sheet.

We look forward to hearing from you.

Yours sincerely

David Schmidt for the research team

David Schmidt, Dr Kerith Duncanson, Dr Emma Webster and Professor David Lyle

Appendix 4: interview guide

Interview schedule value of research tra

Schmidt D, *et al. BMJ Open* 2022; 12:e065972. doi: 10.1136/bmjopen-2022-065972

Appendix 5: Investigator Curriculums Vitae

CV D Schmidt 2020 1 page.doc

1. David Schmidt
2. Dr Kerith Duncanson: https://www.newcastle.edu.au/profile/kerith-duncanson
3. Prof David Lyle: https://www.nswruralhealthresearch.org.au/committee_members/professor-david-lyle/

david.lyle_publications.pdf

4. Dr Emma Webster https://www.sydney.edu.au/medicine-health/about/our-people/academic-staff/emma-webster.html

Emily Saurman CV-abbreviated 2020.pc

5. Dr Emily Saurman

Appendix 6

PhD Map of related research activities