

Building Research Capacity in a Regional Australian Health Service: a management strategy analysis

K Murphy, D Stockton, A Kolbe, A Hulme-Chambers and G Smythe

Abstract

Research capacity building (RCB) can be challenging for health services, especially in non-metropolitan areas. This management analysis documents the RCB strategy recently initiated by Albury Wodonga Health (AWH), a large health service in regional Australia. AWH's strategy addresses three steps believed to be crucial in planning effective RCB: an initial needs assessment, identification of clear success indicators and multi-level structural considerations. In particular, AWH's strategy is based on current evidence pointing to the importance of external partnerships, the need for whole-of-organisation leadership, and the need to involve appropriate personnel. Early achievements of AWH's strategy include Executive-endorsed organisational research priorities, wide awareness of RCB as a whole-of organisation goal, agreed protocols for initiating and reviewing research proposals, formalised university partnerships, the establishment of a vibrant Research Interest Group, a

number of current and planned collaborative projects, improved communication about research activities within AWH, and a program logic and evaluation framework to assist in maintaining focus and assessing the effectiveness of the strategy over the longer term. AWH's RCB strategy may serve as a modifiable model for managers of other similar health services pursuing a stronger research culture.

Abbreviations: AWCHR – Albury Wodonga Collaborative Health Research; AWH – Albury Wodonga Health; CSU – Charles Sturt University; IKT – Integrated Knowledge Transfer; RCB – Research Capacity Building; RDB – Research Development Building; RIG – Research Interest Group.

Key words: Evaluation; logic model; program planning; program theory; research capacity development; professional development.

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Research capacity building (RCB) refers to individual and organisational developments which lead to greater ability to access, conduct, and apply useful research. [1,2] Albury Wodonga Health (AWH) is a large regional health service committed to pursuing the benefits of RCB and, in 2013, began planning a comprehensive RCB strategy, including the development of an evaluation framework to monitor its effectiveness. This article describes AWH's strategy, the rationale behind it, and its preliminary outcomes.

The issue

The RCB Literature

Effective RCB in health services has numerous benefits. RCB can improve staff ability to apply research findings effectively [3] and have a positive impact on job satisfaction, everyday practice, and professional confidence. [4] The capacity of health professionals to engage in research

activities and evidence-based practice is also a strong predictor of staff retention. [5] To achieve these benefits, however, RCB initiatives must be sustainable. The existing literature is convergent regarding the conditions required for sustainable RCB activities. Three recurring themes dominate the literature.

The first theme is the importance of a collaborative or partnership approach that connects practitioners with university academics or with each other in collaborative interprofessional teams. [4,6,7,8,9] The second theme is the need for active high-level leadership across the whole organisation. [4,6,10,11] The third theme is the need to involve appropriate personnel, focusing on staff members who are interested in research. [12] Including professionals who have some expertise or previous experience in undertaking research is important for supporting staff who are new to research. [4,8]

The AWH context

The RCB initiative described in the current article is being undertaken in a regional health service. Regional areas are less likely to have conjoint appointments between health services and universities, and are involved to a lesser extent in medical research, such as clinical trials. Further, there are fewer formal relationships between health services and universities, compared with urban locations. There is a pressing need to support RCB in non-metropolitan areas. [13] In recent years, a number of AWH managers and executives have recognised that AWH, like many other regional health services, lacked a strong research culture.

The regional city of Albury-Wodonga spans the New South Wales (Albury) and Victoria (Wodonga) border in south-eastern Australia. AWH staff numbers have recently risen from 1800 to 2200 due to amalgamation of services. It provides a comprehensive and growing range of health services spanning the primary, sub-acute, and acute needs of regional residents. The catchment area population for AWH is estimated to be 260,000 people.

In addition to AWH, three universities engaged in allied health, nursing and medical training and research have a physical presence in the Albury-Wodonga region. AWH's RCB approach is based largely on a mutually beneficial collaboration between AWH and these three universities.

The management approach

AWH's approach addresses three elements believed to be critical to developing an effective RCB strategy: an initial needs assessment; identification of clear success indicators that reflect the purposes driving the RCB

strategy; and structural considerations leading to multi-level interventions, spanning individual, organisational, and broader network levels. [12,14,15]

1. Needs assessment

Various models of needs assessment have been identified in the literature. [15] The 'corporate approach' involves soliciting the opinions and visions of key stakeholders and then establishing structures and interventions in an attempt to achieve the desired outcomes. AWH adopted this approach, seeking to engage all stakeholders. AWH commenced its RCB journey by seeking advice and support from a local university. Charles Sturt University (CSU) is one of the three universities noted above that provide health professional training in the region. AWH's initial collaboration with CSU assisted AWH to access RCB literature and identify a tool suitable for use in the needs assessment stage.

Initial self-assessment

The Canadian Health Services Research Foundation, now called the Canadian Foundation for Healthcare Improvement, offered a tool that assessed four research-capacity domains: how well the organisation is able to 'acquire', 'assess', 'adapt' and 'apply' research. [16,17] This tool is available with permission from <http://www.cfhi/cass.ca/PublicationsAndResources/ResourcesAndTools/SelfAssessmentTool.aspx> With permission, the tool was distributed to Executive and Senior Clinical Leaders with background information about the aims of the self-assessment. Completing the questionnaire assisted these leaders to consider AWH's current capacity to access relevant research, assess the validity of its findings, and apply these findings to practice, in relation to questions about both clinical practice and broader service operations.

While response rates were lower than anticipated, anecdotal feedback indicated that this activity piqued interest in the potential benefits of increased internal and intersectoral research at AWH. Discussions were prompted which raised the profile of RCB as an organisational aim. This may have enhanced the motivation of some leaders and managers to participate in subsequent RCB activities. Feedback received from Senior Managers in the Clinical Operations and Medical Directorates indicated a range of areas in which enhanced research capacity would be beneficial to AWH. Overall, the results of this self-assessment reinforced the need to build AWH's research capacity. When discussed at the executive management level, a list of reasons for building research capacity at AWH was generated.

The next step was to ascertain what AWH staff believed AWH's priority research areas should be. This required the

engagement of staff at all levels, including practitioners, middle-level managers, expert clinicians, and senior managers. The AWH-CSU liaison group was initially formed to explore opportunities for collaborative research, but a major early focus became developing a RCB strategy for AWH, beginning with an AWH Research Priorities Forum.

The research priorities forum

AWH's Research Priorities Forum had three objectives:

- To identify a list of research priorities to guide AWH's selection of future research projects and university collaborations;
- To finalise a prioritisation matrix to be used to assess the merit of future research proposals; and
- To generate possible protocols for proposing and approving future research projects, including internal, external, and intersectoral projects.

All AWH staff were invited to respond to an anonymous online survey titled 'AWH Staff Research Directions survey'. The survey invited written responses to open-ended questions regarding areas of client care and service development that might benefit from 'new knowledge'. Written responses were received from 32 staff. Respondents included clinicians across a range of disciplines and clinical contexts, from critical care and acute inpatient services to rehabilitation and community outpatient services. These responses placed a high value on applied research with direct relevance to clinical care and service improvement.

From the written responses received, through a process of content analysis conducted by a CSU academic, 16 themes were identified. The number of survey respondents ($n=32$) was lower than ideal. This may be due to the fact that open-ended survey questions are relatively demanding, compared to tick-box and rating-scale questions. Informal conversations suggested that provision of hard copies of the survey in staff areas might have improved the response rate in some departments, where email/computer use is less frequent.

Senior managers, delegates, and consumer representatives were then invited to attend a half-day Research Directions Forum. Invitations were sent to senior managers and those with delegated decision-making authority across nursing, allied health, medicine, mental health, and quality services. The initial email flyer and invitation to the forum resulted in a poor response. However, follow-up with an Outlook Calendar meeting invitation worked more effectively, with 25 senior managers or delegates committing to attend the event.

The forum provided a further opportunity to raise the profile of RCB at AWH, which was enhanced by the use of external facilitators, two academics from CSU. The forum commenced with a presentation about the benefits of RCB in healthcare and the current research landscape, including national and state-level research priorities. After an explanation of the AWH Staff Research Directions survey process, the 16 identified themes were presented as possible research directions for AWH, which ultimately the forum attendees would be asked to rank and select a smaller subset from.

In small groups, attendees were asked to rank the research directions. Each group focused on four possible directions. This exercise was assisted by the use of a prioritisation matrix drafted in advance by the AWH-CSU Liaison group. The matrix enabled participants to 'score' the level of feasibility and importance of each possible research direction. The wording and structure was refined during the 'scoring' discussions. The matrix was also intended to ultimately serve as a tool for AWH to assess the merit of specific research project proposals. A valuable outcome of the forum was the refinement of the direction prioritisation matrix into a research proposal assessment matrix that can be used to guide the deliberations of the relevant AWH Executive Director when considering research proposals (see Figure 1). The seven highest-scoring directions included some specific to clinical care and others related to organisational culture and staff development. It was agreed these should be presented to the Board and Executive for endorsement as AWH's research priorities. A draft research proposal assessment protocol, in the form of a procedural flowchart, was also presented, discussed, and refined for proposal to the Executive.

The proposed research priorities were endorsed without change. The alignment of the forum process and outcomes with AWH's Strategic Plan was believed to be crucial in securing such strong high-level support. The endorsed research priorities were believed by the Executive to provide a useful foundation on which to invite university partners to contribute to AWH's research agenda.

On reflection, the AWH-CSU Liaison Group felt that the pre-forum survey, providing predetermined themes for ranking, provided a useful 'rock' for forum participants and contributed to the efficiency of the forum by guiding and focusing the discussions. It was also felt that the content analysis of the survey responses by an external person (a CSU academic) and facilitation of the forum itself by external facilitators (two CSU academics) was helpful in minimising the potential for perceived bias.

Figure 1: AWH's final research proposal assessment matrix

	VERY POSITIVE OR EASY (4)	SOMEWHAT POSITIVE OR EASY (3)	SOMEWHAT NEGATIVE OR DIFFICULT (2)	VERY NEGATIVE OR DIFFICULT (1)
Degree of fit with AWH's Research Priorities				
Degree of fit with AWH's Strategic Plan				
Ease of data collection • Data already exists = 4				
Expected cost / time required • No or little cost = 4 • Consider current staff skills & ease of developing staff skills • Consider availability of external assistance				
Potential for impact on AWH policies				
Potential for impact on AWH practices				
Potential to generalise or transfer findings to other services • May bear on potential for external funding and/or publication				
Potential to decrease identified risks				

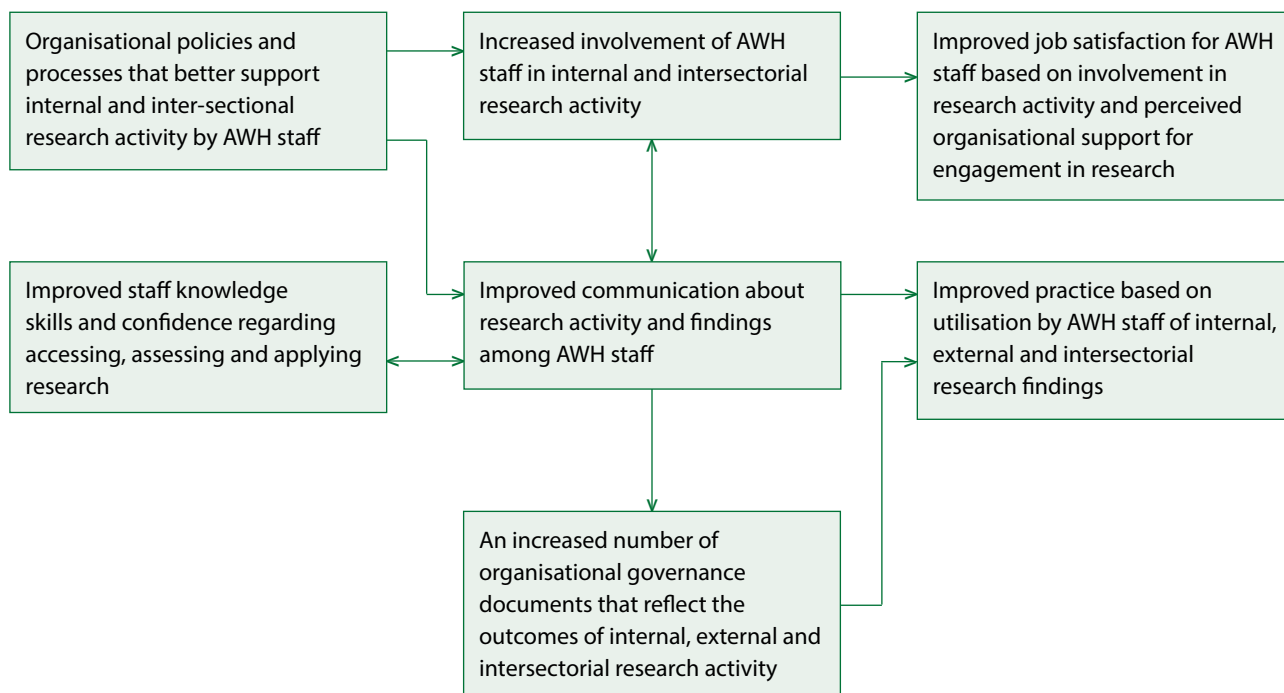
2. Identification of success indicators

Among other conclusions and recommendations, Cooke and colleagues [15] highlighted the need for the development of meaningful measures for assessing the outcomes of RCB in health services. In particular, they called for further research on the impact of RCB interventions on research utilisation in practice. Traditional RCB outcome measures (ie, successful grant applications and publications in peer reviewed journals) are important measures in university contexts, but such outcomes are often irrelevant to the aims of RCB in healthcare contexts. [14] For example, traditional research-output indicators do not capture progress amongst novice researchers, the impact on perceived organisational support for research, or the usefulness of the research undertaken.

The AWH Executive was asked to engage in a process of identifying the most important goals of RCB for AWH, beyond the nebulous outcome of increasing research capacity. Goals and objectives needed to be explicated to guide both the planning of RCB activities and the evaluation

of the effectiveness of these activities. Goals, here, refer to the intended ultimate outcomes of the RCB strategy, and objectives refer to short and medium-term achievements believed to be necessary in order to meet these goals. The goals and objectives, once clarified, were organised into a program theory (also known as a program logic model), which is represented in Figure 2. As can be seen, AWH's ultimate goals concern (a) increasing perceived organisational support for research and associated job satisfaction and (b) improving managerial and clinical practice. The logic model shown in Figure 2 makes explicit the theoretical assumptions linking the planned RCB activities to the ultimate goals of the strategy. This model also provided a basis for identifying meaningful measures and indicators by which the overall success of the strategy will be evaluated. These measures and indicators are shown in Table 1.

Alongside the measures identified in Table 1, which are key to evaluating the longer-term outcomes of the strategy, process evaluation will be undertaken to assess how fully

Figure 2: The program logic underpinning AWH's RCB strategy

and effectively the planned RCB activities are implemented. Continual process evaluation will assist in understanding whether a failure to achieve any objective or goal was due to a program theory failure or a program implementation

failure. [18] AWH's RCB strategy may be refined based on the findings of this continual evaluation process. The long-term evaluation findings will be published in due course.

Table 1: AWH's RCB measures and success indicators

	MEASURES	SUCCESS INDICATORS	TIMELINE
Immediate Objectives			
Organisational policies and procedures that better support internal and intersectoral research activity by AWH staff.	Analyse relevant documents to identify content that guides or facilitates internal and collaborative research activity.	New structures, policies, and procedures have been established to support internal and collaborative research activity.	2013-2015 (compared with pre-2013).
Improved staff knowledge, skills, and confidence regarding accessing, assessing and applying research.	<p>Monitor Research Interest Group attendance, meeting frequency, and satisfaction-levels.</p> <p>Anonymously pre and post-test attendees on knowledge and self-rated research skills at each Research Interest Group training event.</p> <p>Survey all clinical staff re self-rated research utilisation confidence in annual learning needs survey (Likert scales)</p>	<p>Research Interest Group meetings are attended and reported by those involved to be informative and worthwhile (Likert scales).</p> <p>Increased mean knowledge scores and self-ratings for every training event.</p> <p>Increased mean ratings in all AWH departments</p>	2014-2016

Table 1: AWH's RCB measures and success indicators *continued*

	MEASURES	SUCCESS INDICATORS	TIMELINE
Intermediate Objectives			
Increased involvement of AWH staff in internal and intersectoral research activity.	Draw on existing register routinely used to record AWH research activity: topics, departments, staff numbers, and collaborating partners. Collect additional data: research presentations, publications, and actual policy and practice outcomes of completed projects.	<p>New internal projects initiated in line with newly developed policies and procedures.</p> <p>New intersectoral collaborations initiated in line with newly developed policies and procedures.</p> <p>Increased overall number of staff involved in internal or collaborative research, including presentations and publications.</p>	2014-2016 (compared with projects registered pre-2014)
Improved communication about research activity and findings among AWH staff.	<p>Review AWH newsletters</p> <p>In 2014 and again in 2016, survey all staff regarding awareness of RCB efforts at AWH, what is known about the RCB initiative and research activities at AWH, and the sources of this information; analyse by role in organisation (eg, clinical leadership) Audit research reporting by Manager. (PD&R), 2014-2015.</p> <p>Examine relevant AWH committee meeting minutes (Clinical Leadership, Clinical Governance, and Clinical Operations) for communication about actual and potential research activity.</p>	<p>Research update section (research activity and findings) is included in every AWH newsletter.</p> <p>From 2014 to 2016, 50% more respondents overall report awareness of RCB at AWH and 1+ example of research activity at AWH.</p> <p>Monthly research reports are submitted by Manager (PD&R) to relevant committees (Clinical Leadership, Clinical Governance, and Clinical Operations).</p> <p>Research discussion is regularly recorded in the minutes of relevant committee meetings as a standing agenda item.</p>	2014-2016
An increased number of organisational governance documents that reflect the outcomes of internal, external, and intersectoral research activity.	Search organisational governance documents for reflections of research.	At least one new/revised governance document is generated that reflects research findings.	2014-2017

Table 1: AWH's RCB measures and success indicators *continued*

	MEASURES	SUCCESS INDICATORS	TIMELINE
Ultimate Goals			
Improved job satisfaction for AWH staff based on involvement in research activity and perceived organisational support for engagement in research.	Survey all staff re participation in research, perceived organisational support for research, and research related job satisfaction in AWH's Annual Learning Needs survey (Likert scales)	Increased mean ratings in all AWH departments.	2014-2017
Improved practice based on utilisation by AWH staff of internal, external, and collaborative research findings.	Determine if practice-based actions or decisions (including no change) resulted from completed research projects on the research project register.	Evidence-based actions or decisions (including no change) resulted from every completed research project.	2015-2017

3. Multi-level RCB interventions

The RCB activities described below are either already completed, ongoing, or planned for the future. For reasons mentioned above, these activities span inter-organisational partnership, whole-of-organisation, and individual levels. [6,8,12,9]

Partnership approach

A goal in AWH's Strategic Plan (2010-2015) is to develop 'a combined research capability' with external researchers. There are clear benefits of collaborative research by university academics and health service staff. Integrated knowledge translation (IKT) is a term coined by the Canadian Institutes of Health Research. [19] It refers to the engagement of potential users of health-research knowledge in the research process itself. In IKT, researchers and health service staff work together to shape the research process by collaborating to determine the research questions and methodology, develop tools and collect data, interpret the findings, and disseminate the research results. As such, IKT involves action-oriented research that is relevant to the needs of its end-users.

A formal committee of representatives from CSU (Albury), La Trobe University (Wodonga), and the University of New South Wales (Albury) was formed to facilitate IKT in the region. Called the Albury Wodonga Collaborative Health Research (AWCHR) Committee, its terms of reference include two key aims: to identify and facilitate collaborative research opportunities that align with the research priorities of partner organisations, and to facilitate professional development in health and clinical research for the staff of

partner organisations. Early after its formation, the AWCHR Committee, in liaison with the AWH Executive, worked to develop the program theory and outcome measures presented above.

A major ongoing focus of the Committee is facilitating connections between regional academics, research students, and AWH practitioners. AWH's Manager of Professional Development and Research (Manager, PD&R) is a committee member well-placed to identify suitable AWH staff members for university academics to talk with about possible research projects. Likewise, local university representatives are well-placed to find academics at their institutions who may be interested in discussing research ideas with AWH staff. Already, CSU Allied Health Honours projects are being successfully co-supervised by CSU academics and AWH expert clinicians. Co-supervision of future Honours, Masters, and PhD research projects is being discussed.

Whole-of-organisation leadership

AWH's RCB quest has the support of the highest levels of leadership in the organisation. Strong leadership has been present from the beginning of the initiative. This began with early discussions at the executive level about the need to strengthen the research culture at AWH. It also includes the subsequent identification of two paramount goals by the Executive (see Figure 2), which provided direction regarding both RCB activity planning and the development of an appropriate evaluation framework (see Table 1).

The Board and Executive enthusiastically endorsed the research priorities identified in the Research Directions Forum, and the Executive adopted the proposed protocol for

accepting, reviewing, and approving project proposals. All levels of leadership (Board members, the Executive, Senior Management) have shown a keen interest in the initiative, itself led by a senior manager (Manager, PD&R). Recently, the term 'Research' was added to the position title of this manager, and research coordination and reporting has been added as a key performance indicator in the position-description of this manager. Key leadership committees are now expected to discuss current, recent and/or potential research activity as a standing agenda item in routine meetings.

Appropriate personnel

AWH is committed to building the capability of interested individual staff members to engage in research in the endorsed priority areas. The aim is to increase the knowledge and skill-levels of interested staff at all levels of the organisation to engage in research either internally within AWH research teams or with local university researchers. The assistance of the AWCHR Committee is being called on to facilitate training for AWH staff groups, specifically tailored to the needs expressed by the staff members interested in the training. A wide range of topic ideas has been generated by a recently formed Research Interest Group (RIG).

The AWH RIG was formed to support, inform, and encourage staff with an interest in research, including those with post-graduate research experience and qualifications. Over 20 staff members from across the organisation responded to the initial invitation to join the group, and this number is still growing. All staff interested in building or sharing their research insights and skills are simply added to an email list and invited to bimonthly meetings, held at various times. Convened by the Manager (PD&R), this group's membership is open and fluid, accommodating the varying needs and foci of the staff who attend.

In response to RIG suggestions, an Evidence Based Practice and Research Skills education program is evolving. Currently planned topics range from how to access research findings, initiate research at AWH, and apply for grants, to how to write a conference abstract or research article for publication. Training events are held separately from (ie, in addition to) the bi-monthly RIG meetings, at the request of RIG members, to protect meeting times as opportunities to informally support one another. AWH staff (eg, librarians) and academics from local universities represented on the AWCHR Committee run the training sessions, as appropriate. Training is also planned for middle-level managers in how to support and facilitate research by their staff, in line with AWH's new protocols in this area.

Early outcomes

Hindsight suggests some ways in which the initial needs assessment phase might have been conducted more effectively. For example, provision of hard-copies of the pre-forum survey, alongside the online version, might have attracted a higher response rate in some departments and raised awareness of the RCB initiative more widely. In addition, it is difficult to know if the CHSRF tool used in the initial needs assessment phase was the best tool for the purpose. An alternative would have been the Auditing Research Capacity (ARC) tool, [14,20] which focuses on evidence-based principles of health service RCB and provides a snap-shot of an organisation's research capacity. This might have provided an equally or more suitable tool for AWH's purposes, perhaps as a pre and post measure.

Notwithstanding this, a number of promising outcomes have been achieved by the strategy so far. These include a set of Executive-endorsed organisational research priorities, widening awareness of RCB as a whole-of-organisation goal, agreed protocols for initiating and reviewing research proposals (including a proposal assessment matrix), formalised university partnerships, the establishment of a vibrant Research Interest Group, a number of current and planned collaborative projects, improved communication about research activities within AWH (eg, in staff newsletters and as standing items in meeting agendas), and a logic model and evaluation framework to assist in maintaining focus and assessing the effectiveness of the strategy over the longer term.

In general, the alignment of AWH's RCB strategy with AWH's Strategic Plan is believed to be a major strength of the strategy, helping to secure support at all levels of leadership. Additionally, the involvement of regional university academics in the AWCHR Committee, including as key players in AWH's Research Directions Forum and in helping to develop a guiding program theory and evaluation framework, has been critical. The continued engagement of the AWCHR Committee will be crucial to the ultimate success of the initiative.

Competing interests

The authors declare that they have no competing interests.

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