



Special Commission of Inquiry into Healthcare Funding

Submission Number: 29

Name: SPHERE, Australian Catholic University

Date Received: 24/10/2023

SPHERE Nursing and Midwifery Clinician Researcher Career Pathway: New role for nurses and midwives

This submission is presented on behalf of The Nursing and Midwifery Implementation Science Academy of the Maridulu Budyari Gumal - Sydney Partnership for Health, Education, Research and Enterprise (SPHERE).¹ The Academy has co-designed a Nursing and Midwifery Clinician Researcher Career Pathway, to progressively introduce research training and career fellowships to nurses and midwives.

We address the following Terms of Reference:

D. Strategies available to NSW Health to address escalating costs, limit wastage, minimise over servicing and identify gaps or areas of improvement in financial management and proposed recommendations to enhance accountability and efficiency;

F. vi. The skill mix, distribution and scope of practice of the health workforce;

F. ix. Opportunities for an expanded scope of practice for paramedics, community and allied health workers, nurses and/or midwives;

H. New models of care and technical and clinical innovations to improve health outcomes for the people of NSW, including but not limited to technical and clinical innovation, changes to scope of practice, workforce innovation and funding innovation.

Nurses and midwives represent the largest proportion of health professionals (55%)² and as providers of 24-hour direct care within acute care settings, are well-placed to lead and implement evidence-based practice change and deliver cost-effective health care. Research conducted by Australian nurses and midwives with research higher degrees, have delivered important care outcomes and cost savings as reported in the Medical Journal of Australia — *less frequent replacement of infusion sets saving \$75 million in annual costs for central venous and peripheral arterial catheters, savings of >\$560 per women with the introduction of caseload midwifery, reductions in death and disability from stroke nursing protocols, with \$65 million savings in health care costs.*³ These examples reflect the potential for nurses and midwives to deliver evidence-based clinical and health system interventions that result in substantial cost savings.

The new role proposed here is that of a **Nurse or Midwife Clinician Researcher**, that is, a nurse or midwife, who has a proportion of their role as a clinician but also as a leader of research within their clinical area. Our research has highlighted that health consumers are supportive of nurses and midwives delivering evidence-based care and leading research, and nurses and midwives themselves, believe this Pathway and this new role, would expedite the process of putting research into practice (Johnson et al, in progress). Similarly, nurses and midwives believe that this new role will enhance the profession increasing retention of staff, contributing to autonomy in practice, while meeting organisational goals (Johnson et al., in progress).

This opportunity to transform the clinical setting, is currently being *lost*, due to the very low numbers of nurses and midwives with higher degrees; 6.5% nurses and midwives compared to 36% in medicine, limiting their potential.⁴

Our proposal:

To address this shortfall, we have co-designed a **Nursing and Midwifery Clinician Researcher Career Pathway** which includes training and research career development. This pathway contains three major awards: ***Support Programs*** (Internship, Transitions, Mentorship), ***Training Opportunities*** (Scholarships for Honours, Masters by Research and Doctoral Studies), and ***Clinician Researcher Fellowships*** (Level 1 [early career researcher] to Level 4 [established researcher, Professorial Chair]) (see Figure 1).⁵ Of note, our Pathway differs from previous nursing and midwifery research support initiatives in Australia in that it promotes fully-funded research opportunities, with no loss of salary. **The Pathway is currently designed and costed for a 12 year period, with projections of 52 nurses and midwives with completed Research Higher Degrees, per metropolitan Local Health District (LHD), and 26 per rural and remote LHDs, over a proposed 12 year cycle.**

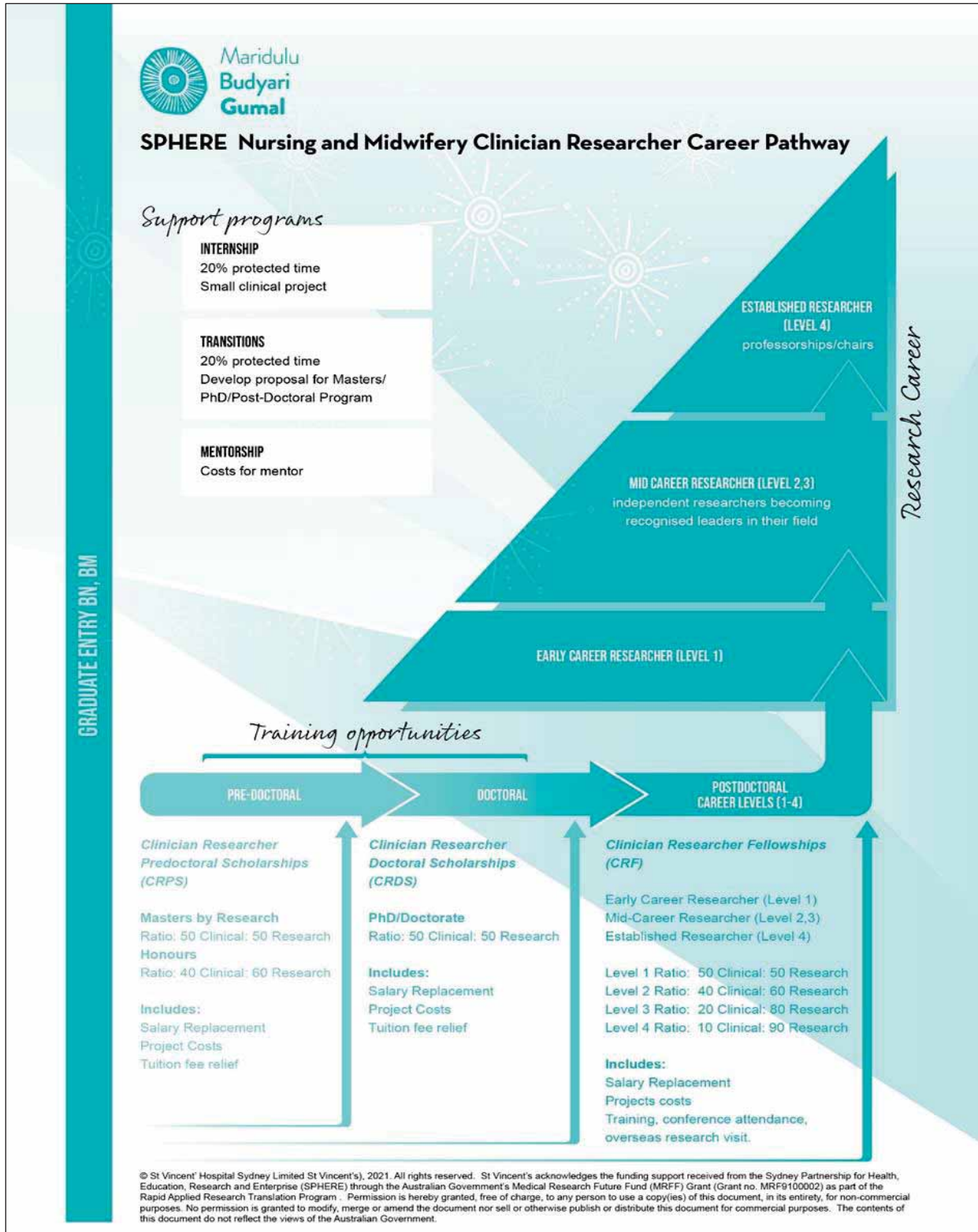


Figure 1: SPHERE Nursing and Midwifery Clinician Researcher Career Pathway

This Pathway seeks to increase the proportion of nurses and midwives with higher degrees, within local health districts, from 6.5% (2019) to 10% (2035). The approach is a slow progressive plan to support staff while meeting health service needs: 10 in support programs, 20 in training programs, and 3 in clinician researcher fellowships in one year across a local health district containing 4 or 5 hospitals.

Senior nursing and midwifery executives and university partners are fully supportive of the approach, and although university partners have scholarship funds available, local health districts, have no funds to support the introduction of this Pathway to full capacity. **Funds required represent less than 0.12% to 0.14% of the total employee-related expenses within LHDs.⁶ This Pathway, uses existing staff designations, to include this role, rather than creating new categories of staff.** Nurses and midwives have emphasised that this Pathway provides a fair and equitable approach to these positions, that is available to all interested nurses and midwives (Johnson, in progress).

We, therefore, propose the following recommendation:

1. NSW Ministry of Health include within it's local health district (LHD) funding agreements, capacity to implement the SPHERE Nursing and Midwifery Clinician Researcher Career Pathway (or a similar equivalent) to expand the role of nurses and midwives to include clinician researcher training and support, furthering career choices and improving patient outcomes.



Adj/Professor Anna Thornton

Executive Director of Nursing
St Vincent's Health Network Sydney
Executive Committee Member
Nursing and Midwifery Implementation Science
Academy, Maridulu Budyari Gumal - Sydney
Partnership for Health, Education, Research and
Enterprise (SPHERE)



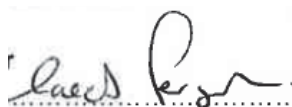
Professor Chris White

Interim Director, Maridulu Budyari Gumal - Sydney
Partnership for Health, Education, Research and
Enterprise (SPHERE)



Professor Sandy Middleton

Director, Nursing Research Institute
St Vincent's Health Network Sydney and Australian
Catholic University
Director, Nursing and Midwifery Implementation Science
Academy, Maridulu Budyari Gumal - Sydney Partnership
for Health, Education, Research and Enterprise (SPHERE)



Professor Caleb Ferguson

Director, Health Innovations Research Centre, Faculty of
Science, Medicine & Health,
University of Wollongong
Director, Centre for Chronic & Complex Care Research,
Western Sydney Local Health District
Deputy Director, Nursing and Midwifery Implementation
Science Academy, Maridulu Budyari Gumal - Sydney
Partnership for Health, Education, Research and Enterprise
(SPHERE)



Dr Maree Johnson

Clinical Academic Pathways
Research Co-ordinator

On behalf of The Nursing and Midwifery Implementation
Science Academy of the Maridulu Budyari Gumal - Sydney
Partnership for Health, Education, Research and Enterprise
(SPHERE)

¹SPHERE is a NHMRC accredited academic health science research translation centres. It is a collaboration of universities, hospitals, research institutes, community, and primary care centres across Sydney with over 50,000 staff.

² Australian Institute of Health and Welfare. Health workforce. <https://www.aihw.gov.au/reports/Australias-health/health-workforce>. Accessed 23th October 2023.

³ Eckert, M. et al. Harnessing the nursing and midwifery workforce to boost Australia's clinical research impact. *Medical Journal of Australia*. 2022; 217 (10): 514-516. doi: 10.5694/mja2.51758.

⁴ Lee, S. A. et al., (2020). Assessment of Health Research Capacity in Western Sydney Local Health District (WSLHD): A Study on Medical, Nursing and Allied Health Professionals. *Journal of Multidisciplinary Healthcare*, 13, 153-163. <https://doi.org/10.2147/JMDH.S222987>.

⁵ Johnson, M. et al., (in press) Exploring the SPHERE Nursing and Midwifery Clinician Researcher Pathway: A qualitative study. *Collegian*, 2023, <https://doi.org/10.1016/j.colegn.2023.06.002>.

⁶ Estimates obtained from 2020 Financial Reports for SESLHD, SVHNS, SWSLHD, WSLHD.

Harnessing the nursing and midwifery workforce to boost Australia's clinical research impact

The largest health workforce has the greatest research potential; investing in nursing and midwifery researchers is an investment in better care and cost outcomes

For the Medical Research Future Fund (MRFF) to achieve its full impact, it is necessary for health practitioners to be trained and reliably funded to deliver research and translation alongside their clinical work.¹ We offer insight into current systems, concerns and suggestions as this applies to clinical research in nursing and midwifery.

Nurses and midwives globally have a long record of delivering high quality clinical research that improves care and outcomes. An analysis of four landmark nursing-led studies in the United States illustrates the value-adding potential of such research: for every grant dollar, the return on investment ranged from \$202 to \$1206.² In Australia, investment in nursing- and midwifery-led research also pays dividends for health care costs and population and health system outcomes, as evidenced from the many research contributions of Australian nurses and midwives over the past decade (Box).³⁻¹⁰

Nurses and midwives are the frontline workers in hospitals and communities and thus are well positioned to lead research addressing efficacy of clinical and health system interventions. Nurses and midwives work across all aspects of health care delivery, across all age groups, and from metropolitan to rural and remote areas, making their reach and potential impact substantial. To achieve meaningful and sustained impacts on health care outcomes, greater engagement with, and investment in, nursing- and midwifery-led research is needed.

The largest health workforce is underrepresented as recipients of research funding

Health care is a \$181 billion dollar industry in Australia,¹¹ and care based on high quality evidence is essential to the health of the nation. Clinical trials and clinician researchers play a vital role in improving the health care system to benefit consumers, society and the economy.^{12,13} The National Health and Medical Research Council (NHMRC) and the MRFF aim to invest in research informed health care, underpinned by transformative and innovative studies conducted by a skilled and capable health and medical research workforce.^{14,15} However, analysis of research funding reveals profound inequity in the distribution of funds.¹⁶

In Australia, there are over 479 000 nurses and midwives serving our communities.¹⁷ Nurses and midwives constitute 57% of registered health professionals, making them the largest group in the

workforce.¹⁸ Nursing and midwifery interventions are high volume and significantly contribute to both costs and patient outcomes, so the need for a strong evidence base is clear. Although Australia's nurses and midwives are ideally placed to provide solutions to current health service inefficiencies, they are underrepresented as recipients of research grant funding. For example, of the 200 NHMRC grants funded to clinical trials networks between 2004 and 2014, only nine (5%) involved nursing and midwifery-specific research;¹² in 2020, the NHMRC Investigator Grants scheme saw only seven of 238 grants (3%) awarded to nursing and one to midwifery (0.4%);¹⁶ and only one NHMRC 2020 postgraduate scholarship was awarded in nursing (1.6%).¹⁶ Notably, of all NHMRC 2020 grant round applications, only five of 673 successful applications (0.74%) were nursing or midwifery focused, and only 30 of 5221 total applications (0.57%) identified nursing or midwifery as the primary field of research.¹⁹ A severe lack of nursing and midwifery applicants is a major issue.

The nursing- and midwifery-led research space is also likely disproportionately affected by gender disparities in grant outcomes, owing to the high percentage of female nurses and midwives in Australia (over 88%).¹⁷ The NHMRC grant success rate for mid-career women is only 6.5% (compared with 10.9% for men).²⁰ In 2021, women received 23% fewer NHMRC grants and were awarded \$95 million less in funding compared with men.²¹ As identified in the CEO Communique in February 2022 on gender disparities in the NHMRC Investigator Grants scheme, the proportion of female applicants each year also declines quickly with seniority.²²

Employment structures affect ability to lead research that improves the health system

Grant criteria have also inhibited nurses' and midwives' opportunities to apply for funding. For example, the 2020 MRFF Clinician Researchers initiative grants required chief investigators to be clinician researchers (defined as health professionals who practised in a clinical capacity).²³ Historically, nurses and midwives have had to choose between a clinical or academic career, partly because of the way in which nursing and midwifery care is provided. Academic nurses or midwives and those employed by health sectors as independent researchers rarely deliver direct clinical care; juxtaposed with clinical nurses and midwives who typically have positions without any included seconded or protected research

Marion Eckert¹

Claire M Rickard²

Deborah Forsythe¹

Kathleen Baird³

Judith Finn⁴

Andrea Gilkison⁵

Richard Gray⁶

Caroline SE Homer⁷ 

Sandy Middleton⁸

Stephen Neville⁵

Lisa Whitehead⁹

Greg R Sharplin¹

Samantha Keogh¹⁰

¹ Rosemary Bryant AO Research Centre, University of South Australia, Adelaide, SA.

² UQ Centre for Clinical Research, University of Queensland, Brisbane, QLD.

³ University of Technology Sydney, Sydney, NSW.

⁴ Curtin University, Perth, WA.

⁵ Auckland University of Technology, Auckland, New Zealand.

⁶ La Trobe University, Melbourne, VIC.

⁷ Burnet Institute, Melbourne, VIC.

⁸ Nursing Research Institute, Australian Catholic University and St Vincent's Health Australia, Sydney, NSW.

⁹ Edith Cowan University, Perth, WA.

¹⁰ Centre for Healthcare Transformation, Queensland University of Technology, Brisbane, QLD.

Select contributions from nursing- and midwifery-led research in Australia

Important care outcomes

- Decreased incidence of catheter-associated urinary tract infections through use of chlorhexidine for cleaning before urinary catheterisation³
- Reduced short term death and disability and longer term mortality from stroke nursing protocols⁴
- Reduced psychological distress and increased preparedness for caregivers of palliative care patients⁵
- Effective relief from labour-related pain with water injections⁶

Major savings for the health system

- Less frequent replacement of infusion sets shown to be safe, reducing national costs by \$75 million annually for central venous and peripheral arterial catheters⁷
- Reduced health care costs (\$13 100 less per person) and duration of all-cause hospital stay (10 days fewer) with home-based intervention for older patients with chronic heart failure⁸
- Caseload midwifery proven safe and cost-effective for women of any risk, saving more than \$560 per woman⁹
- \$65 million savings in health care costs and \$252 million savings in societal costs from stroke nursing protocols over 5 years¹⁰

time. Thus, until now, the narrow definition of clinician researcher excluded many nurses and midwives.

The Australasian Nursing and Midwifery Clinical Trials Network, a consortium of senior nursing and midwifery academics across Australia and New Zealand, was recently established to support nurses and midwives to undertake high quality research. The Australasian Nursing and Midwifery Clinical Trials Network liaised with the MRFF following the announcement of the 2020 grant round, and advocated for change to the definition of clinician researcher to ensure inclusivity for nurses and midwives. Whether directly or indirectly related to this advocacy, the definitions under the latest scheme have addressed this, with the 2022 Clinician Researchers: Nurses, Midwives and Allied Health Grant Opportunity guidelines defining a clinician researcher as “a researcher that has current professional registration with the Australian Health Practitioner Regulation Agency” (unpublished document, National Health and Medical Research Council, 2022). In addition, Stream 1 is exclusively for research led by a nurse or midwife. This is an important and welcome first step towards equity for nursing and midwifery researchers.

Nevertheless, the issue is broader than grant scheme eligibility. Lack of protected research time for clinicians restricts their ability to write grant applications, and in the event of winning a grant, presents concerns around work–life balance for those undertaking both research and clinical work. Clinicians and managers may also need practical support to assist with applying for research grants, and there is need for more researchers across the nursing and midwifery workforce who are adequately trained and skilled to design and lead high quality clinical research. Tapping into the great potential of the nursing and midwifery workforce requires building the research capacity and capability of the

workforce, such as by supporting early and mid career research fellowships as in other disciplines, and by strengthening undergraduate research training.

Although the end goal of greater investment in nursing- and midwifery-led research is to improve health care outcomes, it is possible that a push for more researchers could further exacerbate clinical nursing and midwifery shortages. It is important that we work to boost the whole nursing and midwifery workforce, and integrate research as part of the roles, not simply transform our clinicians into researchers.

Moving forward

Much of the work needed to boost nursing- and midwifery-led research in Australia should be led by those in nursing and midwifery leadership. However, action is required more broadly to ensure transdisciplinary policies and initiatives for research training opportunities, funding and systems.

For nurses and midwives, strategies are needed to:

- develop research skills:
 - ▶ by further improving the teaching of undergraduate level research skills and enabling conversion to honours programs;
 - ▶ by bolstering doctoral and postdoctoral research training opportunities and ensuring suitability of programs for nurses and midwives, including those who remain clinically active; and
 - ▶ by improving the quality of nursing and midwifery research outputs; and
- increase resources:
 - ▶ by funding opportunities and embedding career frameworks for nurses and midwives to undertake research that is clinically embedded, whether or not they undertake direct clinical work; and
 - ▶ by creating nursing and midwifery roles that are part clinical and part research, and providing clinicians with dedicated time alongside their care duties to undertake clinical research and translation work (akin to medical colleagues).

Research funding and opportunities should be sustainable, equitable, efficient and responsive to clinical needs.²⁴ Inequalities in research funding across gender and discipline divides should be considered by government and funding bodies when creating funding priorities and grant criteria. We look forward to seeing how recent changes may begin bridging these divides. Nurses and midwives comprise most of Australia’s regulated health care workers. They should therefore be key players in the design, development and leadership of clinical research, and their support as future research leaders is a sound economic investment.

Acknowledgements: We acknowledge the Foundation partners of the Australasian Nursing and Midwifery Clinical Trials Network.

Open access: Open access publishing facilitated by University of South Australia, as part of the Wiley - University of South Australia agreement via the Council of Australian University Librarians.

Competing interests: No relevant disclosures.

Provenance: Not commissioned; externally peer reviewed. ■

© 2022 The Authors. *Medical Journal of Australia* published by John Wiley & Sons Australia, Ltd on behalf of AMPCo Pty Ltd.

This is an open access article under the terms of the [Creative Commons Attribution License](#), which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

- 1 Savill J, Levi C, Geelhoed G. Research translators: powering the MRFF to save lives and create jobs. *Med J Aust* 2021; 215: 142. <https://www.mja.com.au/journal/2021/215/3/research-translators-powering-mrff-save-lives-and-create-jobs>
- 2 Kiely DP, Wysocki AB. Federal funding of nursing research by the National Institutes of Health (NIH): 1993 to 2017. *Nurs Outlook* 2020; 68: 270-283.
- 3 Fasugba O, Cheng AC, Gregory V, et al. Chlorhexidine for meatal cleaning in reducing catheter-associated urinary tract infections: a multicentre stepped-wedge randomised controlled trial. *Lancet Infect Dis* 2019; 19: 611-619.
- 4 Middleton S, Coughlan K, Mnatzaganian G, et al. Mortality reduction for fever, hyperglycemia, and swallowing nurse-initiated stroke intervention: QASC Trial (Quality in Acute Stroke Care) follow-up. *Stroke* 2017; 48: 1331-1336.
- 5 Hudson P, Girgis A, Thomas K, et al. Do family meetings for hospitalised palliative care patients improve outcomes and reduce health care costs? A cluster randomised trial. *Palliat Med* 2021; 35: 188-199.
- 6 Lee N, Gao Y, Collins SL, et al. Caesarean delivery rates and analgesia effectiveness following injections of sterile water for back pain in labour: a multicentre, randomised placebo controlled trial. *EClinicalMedicine* 2020; 25: 100447.
- 7 Rickard CM, Nicole M, Larsen EN, et al. Effect of infusion set replacement intervals on catheter-related bloodstream infections (RSVP): a randomised, controlled, equivalence (central venous access device)-non-inferiority (peripheral arterial catheter) trial. *Lancet* 2021; 17: 1447-1458.
- 8 Maru S, Byrnes J, Carrington MJ, et al. Cost-effectiveness of home versus clinic-based management of chronic heart failure: extended follow-up of a pragmatic, multicentre randomized trial cohort - the WHICH? study (Which Heart Failure Intervention Is Most Cost-Effective & Consumer Friendly in Reducing Hospital Care). *Int J Cardiol* 2015; 201: 368-375.
- 9 Tracy SK, Hartz DL, Tracy MB, et al. Caseload midwifery care versus standard maternity care for women of any risk: M@NGO, a randomised controlled trial. *Lancet* 2013; 382: 1723-1732.
- 10 Marquina C, Ademi Z, Zomer E, et al. Cost burden and cost-effective analysis of the nationwide implementation of the quality in acute stroke care protocol in Australia. *J Stroke Cerebrovasc Dis* 2021; 30: 105931.
- 11 Australian Government Department of Health and Aged Care. The Australian health system. <https://www.health.gov.au/about-us/the-australian-health-system> (viewed Apr 2022).
- 12 Australian Clinical Trials Alliance. Report on the activities and achievements of clinical trials networks in Australia: 2004-2014. Melbourne: National Health and Medical Research Council, 2015. https://clinicaltrialsalliance.org.au/wp-content/uploads/2019/11/ACTA_Networks_Report_2004-14_online.pdf (viewed Apr 2022).
- 13 Australian Clinical Trials Alliance. Economic evaluation of investigator-initiated clinical trials conducted by networks: final report. Sydney: Australian Commission on Safety and Quality in Health Care, 2017. <https://www.safetyandquality.gov.au/sites/default/files/migrated/Economic-evaluation-of-investigator-initiated-clinical-trials-conducted-by-networks.pdf> (viewed Apr 2022).
- 14 Australian Medical Research Advisory Board. Australian Medical Research and Innovation Strategy 2021-2026. Canberra: Medical Research Future Fund, 2021. <https://www.health.gov.au/sites/default/files/documents/2021/11/australian-medical-research-and-innovation-strategy-2021-2026.pdf> (viewed Apr 2022).
- 15 National Health and Medical Research Council. Corporate Plan 2021-2022. Canberra: NHMRC, 2021. <https://www.nhmrc.gov.au/about-us/publications/nhmrc-corporate-plan-2021-22#block-views-block-file-attachments-content-block-1> (viewed Apr 2022).
- 16 Ferguson C, Henshall C, Albert NM. Global perspectives on underfunding for Clinical Research Training Fellowships in Nursing. *J Clin Nurs* 2021; 30: e48-e50.
- 17 Nursing and Midwifery Board. Nursing and Midwifery Board of Australia registrant data. Reporting period: 1 Jan 2022 to 31 March 2022. Australian Health Practitioners Regulation Agency, 2022. <https://www.nursingmidwiferyboard.gov.au/search.aspx?q=registrant+data> (viewed Oct 2022).
- 18 Australian Institute of Health and Welfare. Health workforce. <https://www.aihw.gov.au/reports/australias-health/health-workforce> (viewed Oct 2022).
- 19 National Health and Medical Research Council. Summary of the results of the NHMRC 2020 Grant Application Round - Updated 11/02/2021. <https://www.nhmrc.gov.au/funding/data-research/outcomes> (viewed July 2022).
- 20 Matchett S. The (usual) big winners from NHMRC funding 2021. *Campus Morning Mail* 2021; 15 Sep <https://campusmorningmail.com.au/news/the-usual-big-winners-from-nhmrc-funding/> (viewed Mar 2022).
- 21 Purton LB, Borger J. Is Australia's largest medical research funding body doing enough to retain women in STEM?. *Women's Agenda* 2021; 12 Oct. <https://womensagenda.com.au/latest/is-australias-largest-medical-research-funding-body-doing-enough-to-retain-women-in-stemm/> (viewed Mar 2022).
- 22 Kelso A. Gender disparities in NHMRC's Investigator Grant Scheme. CEO Communique - February 2022. 3 Feb 2022. <https://www.nhmrc.gov.au/about-us/news-centre/gender-disparities-nhmrcs-investigator-grant-scheme> (viewed Apr 2022).
- 23 Medical Research Future Fund. 2020 Clinician Researchers: Applied Research in Health Grant Opportunity guidelines. <https://business.gov.au/grants-and-programs/clinician-researchers-applied-research-in-health#key-documents> (viewed Oct 2022).
- 24 Tuffaha HW, Andronis L, Scuffham PA. Setting Medical Research Future Fund priorities: assessing the value of research. *Med J Aust* 2017; 206: 63-65. <https://www.mja.com.au/journal/2017/206/2/setting-medical-research-future-fund-priorities-assessing-value-research> ■

Guidelines

SPHERE Nursing and Midwifery Clinician Researcher Career Pathway

- Scholarships for Higher Degrees in Research
- Fellowships for Research Careers
- Support Programs



Maridulu Budyari Gumal

Working together for good health and wellbeing



SPHERE Nursing and Midwifery Clinician Researcher Career Pathway

Support programs

INTERNSHIP

20% protected time
Small clinical project

TRANSITIONS

20% protected time
Develop proposal for Masters/
PhD/Post-Doctoral Program

MENTORSHIP

Costs for mentor

ESTABLISHED RESEARCHER (LEVEL 4)
professorships/chairs

MID CAREER RESEARCHER (LEVEL 2,3)
independent researchers becoming
recognised leaders in their field

EARLY CAREER RESEARCHER (LEVEL 1)

Research Career

Training opportunities

PRE-DOCTORAL

DOCTORAL

POSTDOCTORAL
CAREER LEVELS (1-4)

*Clinician Researcher
Predoctoral Scholarships
(CRPS)*

**Masters by Research
Honours**

Ratio: 50 Clinical: 50 Research

Ratio: 40 Clinical: 60 Research

Includes:

Salary Replacement
Project Costs
Tuition fee relief

*Clinician Researcher
Doctoral Scholarships
(CRDS)*

PhD/Doctorate

Ratio: 50 Clinical: 50 Research

Includes:

Salary Replacement
Project Costs
Tuition fee relief

*Clinician Researcher Fellowships
(CRF)*

Early Career Researcher (Level 1)

Mid-Career Researcher (Level 2,3)

Established Researcher (Level 4)

Level 1 Ratio: 50 Clinical: 50 Research

Level 2 Ratio: 40 Clinical: 60 Research

Level 3 Ratio: 20 Clinical: 80 Research

Level 4 Ratio: 10 Clinical: 90 Research

Includes:

Salary Replacement
Projects costs
Training, conference attendance,
overseas research visit.

GRADUATE ENTRY BN, BM

TRAINING OPPORTUNITIES- CLINICIAN RESEARCHER PREDOCTORAL SCHOLARSHIPS (CRPS)

Award to complete Masters by Research:

Ratio: 50 Clinical: 50 Research.

Award to complete Honours:

Ratio: 40 Clinical: 60 Research.

Award includes:

- Salary replacement costs for 50% protected time for research.
- Project costs to maximum of \$5000 (Masters).
- Tuition fee offset (Honours 2 years part-time; Masters 4 years part-time).
- Part-time stipend (if available).
- Extension for 6 months part-time in extenuating circumstances i.e., difficulties with ethics approval or recruitment.

Eligibility criteria:

- Two years clinical experience (Masters);
- Current registration to practice with AHPRA;
- Undergraduate degree in nursing and/or midwifery or equivalent at Masters level to entry to practice;
- Letter of support from Executive Director of Nursing of sponsoring Local Health District;
- Evidence of meeting entry criteria to program or letter confirming enrolment;
- Letter from University confirming tuition fee relief, and project costs support (up to \$5000 over the entire degree), part-time stipend (if available), access to training modules without cost, support for external training needs;
- Listing of University preferred for entry if no enrolment letter provided;
- Named Supervisors and 5 years of publications for each supervisor;
- Industry supervisor listed and role in organisation, including short Curriculum Vitae;
- Industry supervisor must meet ERA End-user definition.
- Annual continuance is granted subject to satisfactory progress report from university partner and written report from supervisors.

TRAINING OPPORTUNITIES- CLINICIAN RESEARCHER DOCTORAL SCHOLARSHIPS (CRDS)

Award to complete a Doctor of Philosophy or a Doctorate with a 75% thesis component.

Ratio: 50 Clinical: 50 Research.

Award includes:

- Salary replacement costs for 50% protected time for research.
- Project costs up to \$10000
- Tuition fee offset (6 years part-time)
- Part-time stipend (if available).
- Extension for 12 months part-time in extenuating circumstances i.e., difficulties with ethics approval or recruitment.

Eligibility criteria:

- Two years clinical experience (PhD);
- Current registration to practice with AHPRA;
- Post-graduate degree Masters by Research/Undergraduate honours degree in nursing and/or midwifery;
- Letter of support from Executive Director of Nursing of sponsoring Local Health District;
- Evidence of meeting entry criteria for PhD/Doctorate or letter confirming enrolment from partner university;
- Letter from partner university confirming tuition fee relief and project costs support (maximum \$10,000 over the entire degree), part-time stipend (if available), access to training modules without cost, support for external training needs;
- Listing of University preferred for entry if no enrolment letter provided;
- Named Supervisors and 5 years of publications for each supervisor;
- Industry supervisor listed and role in organisation, including short Curriculum Vitae.
- Industry supervisor must meet ERA End-user definition.
- Annual continuance is granted subject to satisfactory progress report from university partner and written report from supervisors.

RESEARCH CAREER AWARDS (POSTDOCTORAL) – CLINICIAN RESEARCHER FELLOWSHIPS (CRF)

There are 3 awards within this grouping reflecting the broad understanding of post-doctoral researchers— early career researchers (immediate post-doctoral period, developing a program of research), mid-career researchers (two levels, may be experienced independent researcher becoming a recognised leader in their area; may be associate professor), and established researchers (clinical professors, chairs). (See also related Capability Framework).

Early Career Researcher Level 1 Ratio: 50 Clinical: 50 Research
Mid-Career Researcher Level 2 Ratio: 40 Clinical: 60 Research
Mid-Career Researcher Level 3 Ratio: 20 Clinical: 80 Research
Established Researcher (Chair/Clinical Professor) Level 4 Ratio: 10 Clinical: 90 Research.

Award includes:

- Salary costs for protected time.
- Projects costs for Level 1 \$20,000; Level 2 \$40,000 to Level 3 \$60,000 (once only); infrastructure and start-up funds negotiated for Level 4.
- Award covers costs of training, conference attendance, overseas research visit (\$10,000 maximum in total cost).
- Infrastructure funding (1 full time equivalent research assistant/administrative assistant), start-up funds, Level 4 Clinical Chair, additional funds by negotiation between local health district and university partners.
- Length of award 5 years with a further 5 year extension upon review of performance by supporting LHD and university partners.

Eligibility criteria:

- Five years clinical experience;
- Current registration to practice with AHPRA;
- Completed PhD/Doctorate (75% thesis),
- [Note for a Level 1 appointment evidence of the submission of a thesis will be deemed sufficient evidence]
- A defined coherent high quality clinical research program in nursing and midwifery (5 to 7 years duration) for external peer review;
- Evidence of a plan to engage clinical nursing and midwifery staff within a clinical practice change process based on research;
- Evidence of an implementation plan for new knowledge or evidence provided throughout the program or beyond.
- Additional Criteria as defined by employing facility (LHD or University) which may include the following:
 - Capacity to attract and supervise higher degree research students (Level 2 to 4);
 - Evidence of attracting competitive and non-competitive research funding (consistent with level of appointment) (Level 2 to 4);
 - Evidence of track-record in high quality peer reviewed publications within international nursing and health-related journals (Level 1 to 4);
 - Evidence of leading large research teams and conducting multi-site research studies (Level 4);
 - Evidence of an established network of national and international research collaborations (Level 3 and 4);
 - Evidence of changes to local, national or international nursing, midwifery or broader health policy (Level 3 and 4).



Maridulu Budyari Gumal

Working together for good health and wellbeing

Support programs:

INTERNSHIP AWARDS

- 20% protected time to conduct small project under supervision from experienced researcher.
- Provide research experience prior to enrolment in Masters by Research (must be Graduate).
- Salary replacement plus project costs \$2500.
- Duration maximum 52 weeks.
- Access to training modules at no cost from partner universities.
- Letter of support from Executive Director of Nursing of sponsoring Local Health District.

TRANSITIONS AWARDS

- 20% protected time to prepare a proposal or application for predoctoral (Masters by Research) or doctoral scholarship or postdoctoral research program development.
- Under supervision of experienced researcher (5 year publication record to be provided with Curriculum Vitae; potential supervisor(s).
- Salary replacement costs only.
- Duration maximum 52 weeks.
- Access to training modules at no cost from partner universities.
- Letter of support from Executive Director of Nursing of sponsoring Local Health District.

MENTORSHIP AWARDS

- Mentorship;
- Costs of specialised support to a maximum of 100 hours or \$10,000.
- May be provided for Early Career and Mid-Career Research Fellowships, Internships and Transitions Awards. Not applicable to Masters and Doctoral Scholarship students with supervision provided by partner universities.



© St Vincent' Hospital Sydney Limited St Vincent's), 2021. All rights reserved.
St Vincent's acknowledges the funding support received from the Sydney Partnership for Health, Education, Research and Enterprise (SPHERE) through the Australian Government's Medical Research Future Fund (MRFF) Grant (Grant no. MRF9100002) as part of the Rapid Applied Research Translation Program .
Permission is hereby granted, free of charge, to any person to use a copy(ies) of this document, in its entirety, for non-commercial purposes. No permission is granted to modify, merge or amend the document nor sell or otherwise publish or distribute this document for commercial purposes.



Maridulu Budyari Gumal

Working together for good health and wellbeing



Contents lists available at ScienceDirect

Collegian

journal homepage: www.elsevier.com/locate/collegn

Exploring the SPHERE Nursing and Midwifery Clinician Researcher Career Pathway: A qualitative study[☆]

Maree Johnson^{a,b,c}, Caleb Ferguson^{d,e}, Anna Thornton^c, Joylynn Israel^a, Marilyn Cruickshank^f, Debono Deborah^f, Ritin Fernandez^g, Margaret Fry^{f,h}, Louise D Hickman^d, Annmarie Hosie^{c,f,i}, Sally C Inglis^f, Gemma McErlean^{d,j}, Elizabeth McInnes^{a,b}, Lin Perry^f, Suzanne Sheppard-Law^f, Rochelle Wynne^d, Mark Parsons^{k,l,m}, Sandy Middleton^{a,b,c,*}

^a Nursing Research Institute, St Vincent's Health Network Sydney, St Vincent's Hospital Melbourne and the Australian Catholic University, Australia

^b School of Nursing, Midwifery and Paramedicine, Australian Catholic University, Australia

^c St Vincent's Health Network Sydney, NSW, Australia

^d University of Wollongong, NSW, Australia

^e Western Sydney Local Health District, NSW, Australia

^f University of Technology Sydney, NSW, Australia

^g The University of Newcastle, NSW, Australia

^h North Sydney Local Health District, NSW, Australia

ⁱ University of Notre Dame Australia, Australia

^j South Western Sydney Local Health District, NSW, Australia

^k University of New South Wales South Western Sydney Clinical School, NSW, Australia

^l Department of Neurology Liverpool Hospital, NSW, Australia

^m Ingham Institute of Applied Medical Research, Liverpool, NSW, Australia

ARTICLE INFO

Article history:

Received 10 April 2022

Received in revised form 9 May 2023

Accepted 14 June 2023

Keywords:

Clinical academic
Clinician researcher
Nursing
Midwifery
Qualitative

ABSTRACT

Background: There is an urgent need to increase the research capability and capacity within the nursing and midwifery workforce, to underpin evidence-based care.

Aim: To explore the perceptions of nursing service leaders and academics of the Sydney Partnership for Health, Education, Research and Enterprise (SPHERE) Nursing and Midwifery Clinician Researcher Career Pathway for acceptability and utility.

Methods: Using a qualitative descriptive design, data were collected via an online focus group and one individual semi-structured interview. Content and thematic analyses were undertaken.

Findings: Data from 22 participants were included in the analyses. Most participants were female (82%), employed within Local Health Districts (LHDs) (29%), universities (24%), and both LHD and university (47%). There was strong support for the SPHERE Nursing and Midwifery Clinician Researcher Career Pathway. Four major themes were identified: (i) Current disintegration of the clinician researcher role, (ii) Implementation, (iii) Balancing a clinical and research role: need for protected time, and (iv) Reintegration of the clinician researcher role: growing and stabilising a generation of clinician researchers.

Discussion: The SPHERE Nursing and Midwifery Clinician Researcher Career Pathway provides a unique opportunity to develop and sustain the future generation of clinician researchers. To succeed, changes to existing perceptions of clinicians, other health professionals, managers, and consumers are required. Leadership, appropriate language and messaging, and a shared vision is required from a unified professional voice. Protected research time remains the greatest challenge, requiring creative solutions that acknowledge diverse models of care.

[☆] For and on behalf of Maridulu Budyari Gumal – Sydney Partnership for Health, Education, Research & Enterprise (SPHERE), Sydney, New South Wales, Australia.

* Corresponding author at: St Vincent's Hospital, 390 Victoria Street, Sydney 2010, Australia. Tel.: +61 02 83824032.

E-mail address: sandy.middleton@acu.edu.au (S. Middleton).

<https://doi.org/10.1016/j.colegn.2023.06.002>

1322-7696/Crown Copyright © 2023 Published by Elsevier Ltd on behalf of Australian College of Nursing Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please cite this article as: M. Johnson, C. Ferguson, A. Thornton et al., Exploring the SPHERE Nursing and Midwifery Clinician Researcher Career Pathway: A qualitative study, *Collegian*, <https://doi.org/10.1016/j.colegn.2023.06.002>

Conclusion: The SPHERE Nursing and Midwifery Clinician Researcher Pathway provides a vision for the reintegration of the role of clinician and researcher within Australian health services, which may take a generation to transform health service research culture.

Crown Copyright © 2023 Published by Elsevier Ltd on behalf of Australian College of Nursing Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Summary of relevance

Problem or Issue

A strategy to build the critical mass of nurse/midwife clinician researchers (with direct clinical care and research roles) is urgently required to meet the challenge of providing evidence-based care in the context of increasing healthcare burden.

What is already known

Clinical academic pathways for nurses and midwives have existed in the United Kingdom since 2012. Yet, structured, formal, and organised training pathways supported within the clinical setting, for Australian clinician researchers in nursing and midwifery, are lacking.

What this paper adds

- Enhances the understanding of clinical academic pathways for nurses and midwives, promoting advancement of the profession and highlighting opportunities for growth beyond conventional career paths.
- Emphasises the potential of nurses and midwives to act as key change agents to facilitate the integration of research into healthcare practice and make evidence-based care more routine.
- Demonstrates strong support for the clinician researcher career pathways alongside valuable implementation considerations, which if supported effectively, as articulated by several participants, could lead to transformative change to the career trajectories of nurses and midwives.

1. Introduction

High-quality evidence produced from research led by nurses and midwives is critical to improvements in clinical practice and health outcomes. A comprehensive national strategy to build the nurse and midwife researcher workforce is overdue. Integrated academic–health system models, including clinical academic roles and academic–health precinct models, contribute to improved outcomes and are recommended in policy (Boaz, Hanney, Jones, & Soper, 2015; Newington et al., 2021). The transformation of health care, using evidence-based guidelines and policy, is an essential component of many international healthcare reform strategies (Canada [The Chief Public Health Officer, 2021]; United Kingdom [Anderson et al., 2023]) including the Australian National Safety and Quality Health Service Standards (ACSQHC, 2021). For nurses and midwives to engage in evidence-based practice, a critical mass of clinician researchers, providing direct clinical care, with advanced skills to generate new knowledge, implement evidence, and translate research, is required.

Clinical academic pathways for nurses and midwives have undergone substantial development, particularly in the United Kingdom's (UK) National Health Service (NHS) (Finlay, 2012; Westwood, Richardson, Latter, Macleod Clark, & Fader, 2018) but, to date, no national systematic pathway, providing substantial dedicated or protected clinical research time for training within health settings, has been implemented in Australia. Although the term

clinical academic is used extensively in the UK and Europe (Carrick-Sen, Moore, Davidson, Gendong, & Jackson, 2019; Henshall et al., 2021), in Australia, the role is sometimes referred to as 'clinician researcher'. A clinician researcher is defined as a nurse or midwife, registered to practice, who 'conducts research and provides direct clinical services, in any setting, under a formal work arrangement, although not necessarily for the same organisation' National Health and Medical Research Council (NHMRC, 2021, p.3). This study explores the utility of a comprehensive, structured clinician researcher career pathway designed for Australian nurses and midwives, from the perspective of multiple key nurse stakeholders.

Academic–clinical collaborations in nursing and midwifery research have existed within Australia since the early 2000s (Carrick-Sen et al., 2019), within diverse models, although the majority follow a North American approach of a conjoint academic and research role (Albert et al., 2022). Clinical nursing and midwifery professors are still very limited in number and often function as the singular nursing or midwifery professor per health service (a model often where a professor of nursing/midwifery provides expert advice, consultation, research leadership, and local mentorship for a nursing workforce of 3000–5000 nurses working across up to five health facilities across an expansive geographic region). Nursing professors have traditionally been appointed under cost-shared arrangements between health services and universities. The advantages of these models include increased research productivity, increased access to research funding, enhanced dissemination, and translation of research into clinical practice (Albert et al., 2022). Carrick-Sen et al. (2019) recently outlined the challenges of expected (and often unachievable) key performance indicators for Australian clinical professors, often focusing on practice development (or quality improvement)-related projects, while lacking a clinical academic training pathway for joint appointments for early career researchers. These professors, in addition to the other nurse/midwife clinicians engaged in research, often act with limited research and administrative support staff, including lack of funded support from early career researchers and lack of project funding, and remain unable to meet all the demands for knowledge generation and translation required by health services.

The limited research capacity of hospital-based nurses/midwives at all clinical levels, is demonstrated by a recent survey within a single metropolitan health district in New South Wales (NSW) revealing that 36% of medical staff, 18% of allied health staff, and 7% of nursing staff held a higher degree by research (Masters by Research or PhD) (Lee et al., 2020). Conversely, having a research role was described by the participants in relatively similar proportions: medical staff (61%), nursing (47%) (likely to also include clinical research nurses collecting data for industry-sponsored drug and medical device trials [Jones, 2015]), and allied health professionals (41%) (Lee et al., 2020). This disconnectedness of education level and role is concerning. In addition, the self-reported ability of nurses to develop a research proposal (4/10 score) and ethics applications (2.5/10) was poor (Lee et al., 2020). There is a need to increase the number of nurses and midwives with research higher degrees and to increase capacity for clinical research and the capability of nurses and midwives in research activities.

A systematic review of 10 UK research studies identified several existing 'whole' career pathways relevant to nursing (Henshall et al.,

2021). These included clinical academic pathways focused on NHS research priorities (Westwood et al., 2018), Clinical Academic Research Career Scheme with clear progression, including PhD and postdoctoral clinical research fellowships (Upton, Upton, Erol & Penn, 2013), and a clinical academic partnership model with five elements (practice-relevant research aligned with NHS priorities, sustainable collaborations between NHS and higher education institutions, and 'investment commitment, incremental approaches to developing clinical academic leadership; translation of findings into practice' [p. 350]) (Westwood et al., 2018). Scotland's Clinical Academic Research Career (Upton et al., 2013) and Wales' Research Capability Building Collaboration and Knowledge Economy Skills Scholarships (Hiley et al., 2018; Hiley, Jerwood, Price, Thomas, & Kenkre, 2019), also developed models with similar awards. The National Institute for Health Research (NIHR) manages the 'Integrated Clinical Academic Programme', a model for England focused on career development from pre-doctoral, doctoral, and postdoctoral awards with internships (Carrick-Sen, Richardson, Moore, & Dolan, 2016). This model included support programs for bridging between degrees and mentorship (Carrick-Sen et al., 2019). A clinician researcher career pathway was also developed by Australian investigators, which outlined roles (research assistant to clinical professor), qualifications, Australian Qualifications Framework level, and role expectations, and was proposed for national and international application (Smith, Gullick, Ballard & Perry, 2018), however, no systematic implementation has been undertaken.

A recent qualitative review by Newington et al. (2021) focused on the impact of non-medical clinical academic roles (nurses, midwives, allied health professionals, and other non-medical health professionals). Twenty studies were described with 'impacts for patients, service provision and workforce, research profile, culture and capacity, economic impacts, impacts for staff recruitment and retention', knowledge exchange, and impacts to clinical academics (p.15–19). A major sub-theme was that of 'balancing the clinical and academic components of the role' (p.16), with a need for services to manage time release for research and return to practice after secondments. Clinical academics were required to acclimatise to the diverse tasks of research and clinical work (Newington et al., 2021). The presentation of a career pathway was identified as essential to building research profile culture and capacity and important to staff recruitment and retention (Newington et al., 2021).

In summary, several reviews have provided key elements to inform a clinician researcher pathway for Australian nurses and midwives. The Nursing and Midwifery Implementation Science Academy of the Maridulu Gumal Budyari – Sydney Partnership for Health, Education, Research and Enterprise (SPHERE), has co-designed a Nursing and Midwifery Clinician Researcher Career Pathway (the 'Pathway'). SPHERE is one of ten, NHMRC-accredited academic-health science research translation centres. It is a collaboration of universities, hospitals, research institutes, community, and primary care centres across Sydney with over 50,000 staff (see <https://www.thesphere.com.au/about#partners>). The Pathway includes a training and research career pathway, applicable to nurses and midwives in any position. This Pathway contains three major awards: Support Programs (Internship, Transitions, and Mentorship), Training Opportunities (Scholarships for Honours, Masters by Research, and Doctoral Studies), and Clinician Researcher Fellowships (Level 1 [early career researcher] to Level 4 [established researcher, Professorial Chair]) (see Fig. 1). Of note, the Pathway differs from previous nursing and midwifery research support initiatives in Australia in that it advocates for fully funded research opportunities with no loss of salary.

The Pathway provides opportunities for nurses or midwives to receive varying proportions of protected research time (20–50%), to conduct a research project under supervision or Internship (Support Programs) (20%), or undertake a PhD with a local university

(Training Opportunities) (50%), or establish a postdoctoral research career (Clinician Researcher Fellowships) (50–90%) (see Fig. 1). The Pathway, once established with a central funding stream, will provide support for the protected research time for nurses and midwives within the program. The major goal of the Pathway is to increase the numbers of nurses and midwives with research higher degrees within Local Health Districts (LHDs) from 6.5% in 2017 to 10% in 2034.

Aim: We explored the perceptions of senior health service nursing leaders, academics, and nurse researchers, of the acceptability and utility of this Pathway.

2. Participants, ethics, and methods

2.1. Design

This research used a qualitative descriptive design (Sandelowski, 2000). Data were collected via an online focus group and one individual semi-structured interview. The reporting of this study is consistent with the COnsolidated criteria for REporting Qualitative research guidelines (Tong, Sainsbury, & Craig, 2007).

2.2. Ethics

Ethical approval was obtained from the local University Health Research and Ethics Committee, Approval Number 2021-175E, 28th July 2021. Written informed consent was obtained from all participants before the session.

2.3. Sampling and participants

Purposive sampling was used to obtain a range of perspectives from a distribution of senior health service nursing leaders, senior nursing academics, and clinician academics (or conjoint appointments) in existing positions across four NSW LHDs that comprise the SPHERE Nursing and Midwifery Implementation Science Academy. A planned Academy forum provided an opportunity to invite senior executives and/or academics to form a focus group. Individual interviews were offered to those who could not attend the focus group.

2.4. Data collection

One 50-min focus group and one individual 25-min interview was conducted by an experienced qualitative researcher, who was known to some of the participants. These were digitally recorded and transcribed verbatim. Initially, the Pathway was described to participants in detail before the interview questions. Topics covered within the interview included impressions of the Pathway, challenges to implementation, perceptions of how the role of the clinician researcher would evolve within health facilities, and how would senior executives or academics facilitate staff engagement in the Pathway. The interview guide is shown in the [Supplementary material](#). A short demographic survey was completed by the participants recording age, gender, roles, years of nursing and post-registration experience, and organisational affiliations.

2.5. Data analysis

Content analysis, the preferred analysis approach for qualitative descriptive studies (Sandelowski, 2000), was used. Although manifest content analysis was applied predominantly, that is, 'the researcher describes what the informants actually say' (Bengtsson, 2016) (p.11), some latent analysis was used to understand or interpret the meaning of the text (Bengtsson, 2016; Sandelowski, 2000). Qualitative content analysis is noted by Sandelowski (2000) as the 'least interpretive' (p. 338) of the qualitative analysis approaches,

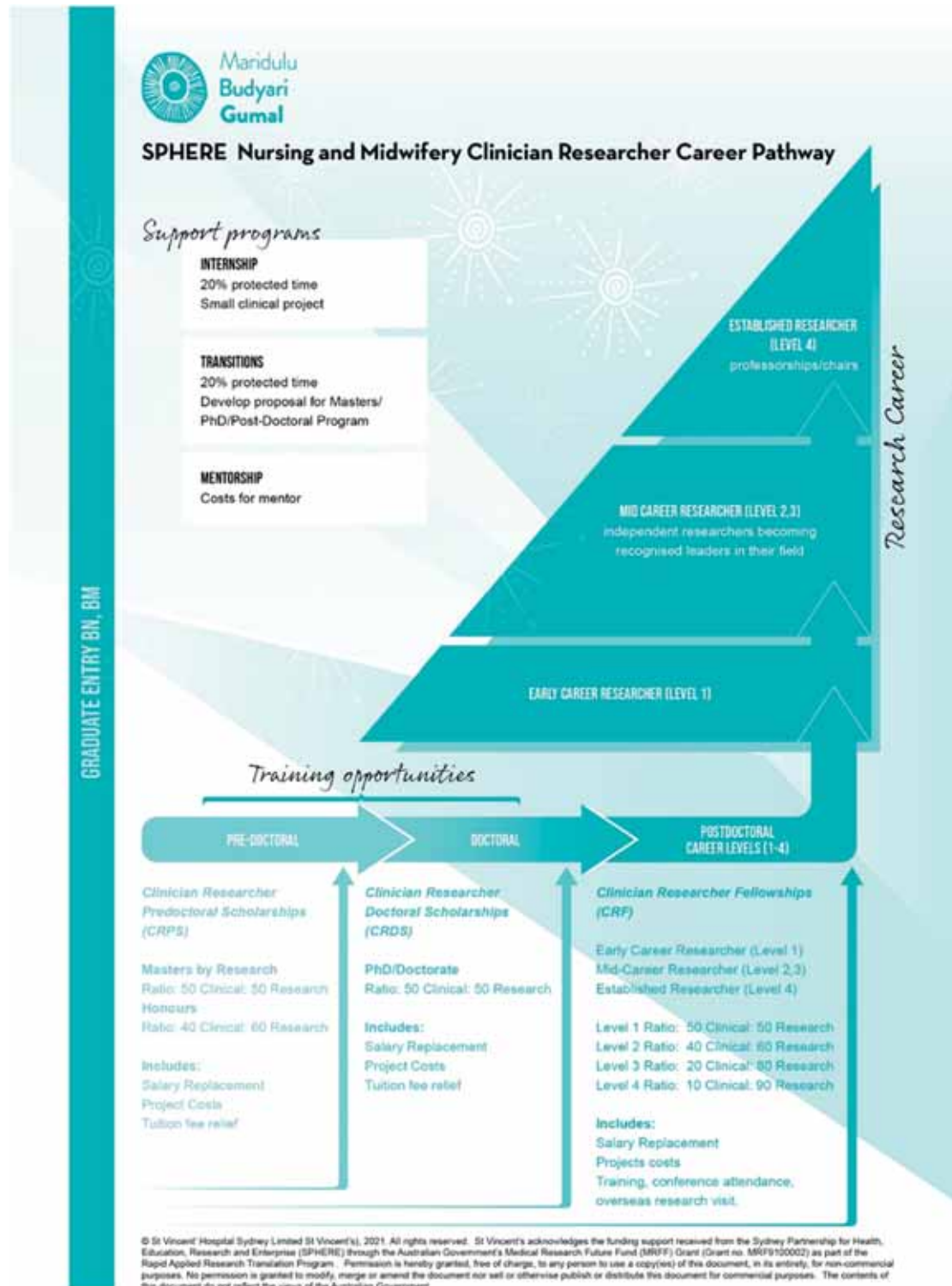


Fig. 1. SPHERE Nursing and Midwifery Clinician Researcher Career Pathway.

with no requirement to create new forms of the data. A specific type of content analysis, a Word Cloud (frequencies of specific words), was also used to deliver a graphic representation of words used by respondents to one specific question relating to Impressions of the Pathway. Word clouds convey enhanced participant meaning beyond frequency counts, that is, the display conveys meaning, rather than counts of words (Bletzer, 2015).

The verbatim transcripts were read several times by the project team. Initial impressions of the data were established and discussed

with four team members to confirm understanding. This was then followed by open coding of meaningful text units, that is, words, groups of words, or sentences. Two investigators coded the data separately, one a nurse very familiar with the context and another unfamiliar, and a non-clinician researcher. On comparison, similarities were evident in the major codes, although labelling varied. These data were then coded using NVivo™ v12 (QSR International, 2022). Clustering of codes (units of text) or categories followed and further shaping of the overall themes/subthemes was undertaken

(Hsieh and Shannon, 2005). These were then reviewed by a further three team members with some reduction in the number of categories, subthemes, and relabelling of themes occurred. Several coding trees were produced throughout the process, which recorded the changes as they occurred, supporting dependability (an audit trail) throughout the process.

Members of the SPHERE Nursing and Midwifery Implementation Science Academy, reviewed initial and final versions of the results and paper, providing member checks. This review resulted in reductions to the text presented but no changes to themes or categories. Members as participants and co-authors minimised potential bias, that is, they reviewed and supported the reporting of what had been said.

3. Findings

3.1. Participant characteristics

A total of 22 Academy members agreed to participate and completed the consent form; however, 5 did not complete the demographics form. Of the returned demographics forms, five were partially completed. Participants were predominantly female (82.4%), with employment within an LHD (29.4%), university (23.5%), and conjoint positions (LHD and university) (47.1%). Participants' roles varied from senior management (35.3%) to researcher and university academic (5.9%). Participants represented an experienced group of nurses and midwives, with the median years of nursing experience 34.5 years and 64.7% held a PhD (see Table 1).

Table 1
Characteristics of participants.

Characteristic	Mean/median/Std. deviation	No. (n) %
Gender		
Female		(14) 82.4%
Male		(2) 11.8%
Not reported		(1) 5.9%
Age (yrs.)		
36–45		(1) 5.9%
46–55		(9) 52.9%
56–65		(6) 35.3%
66–75		(1) 5.9%
Experience in profession (yrs.)	31.14/34.5/9.59	(14) 82.4%
Not reported		(3) 17.6%
Practice Registration in Australia		
Nursing		(14) 82.4%
Both nursing and midwifery		(1) 5.9%
Not reported		(2) 11.8%
Years since registration	31.93/35/5.66	(14) 82.4%
Not reported		(3) 17.6%
Employment		
Local Health Service/Health Facility		(5) 29.4%
University		(4) 23.5%
Both Health Service and University		(8) 47.1%
Role		
Senior management		(6) 35.3%
University academic		(5) 29.4%
Researcher		(2) 11.8%
Both researcher and university academic		(2) 11.8%
Senior management, researcher, and university academic		(1) 5.9%
Not reported		(1) 5.9%
Highest qualification		
PhD		(11) 64.7%
Masters		(6) 35.3%

Note. n = 17.44 members were invited to participate, 22 participated, 5 did not return demographic surveys, and 5 returned surveys were missing some data.



Fig. 2. Word Cloud of impressions of the Pathway. Note: The parameters of the word 'frequency query' included 100 most frequent descriptor words of four-letter length minimum. Stemmed words were grouped under one main word. Then, to edit out non-descriptive words, these sections of text were coded a second time with only one-word descriptions coded. A word frequency query was performed on the one-word codes and a Word Cloud produced as a visual representation of participants' impressions.

3.2. Acceptability and utility of the Pathway

Strong support for the *intention of the Pathway* from senior nursing executives and academic researchers was evident and voiced as follows:

“We feel very strongly as nurse managers and leaders that we need [this] framework. I totally believe that the preparation of nurses to undertake research and to implement evidence in practice [is] just a fundamental underpinning, for now, and the future” (P 5).

“It’s absolutely essential. It’s overdue and if it’s not implemented, nursing is going to get even more left behind in terms of developing and building and expanding research capacity” (P 4).

Prominent words in participants' comments in relation to the design of the Pathway confirmed the acceptability of the Pathway: *impressive, fabulous, forward thought, great, detail, integrated but also complex and complicated*. Viewing of the graphical display of the Word Cloud confirmed an overall positive position (see Fig. 2).

An understanding of the Pathway as being a vision of a new world for clinician researchers within LHDs, emerged, and was captured best by one participant, with the Pathway potentially addressing what was ‘dreamed of’:

“I’ve always dreamed of having a model where there is the professor [who] might oversee or multiple professors, then there’s the associate professors, then there’s CNCs (Clinical Nurse Consultants), post-doctorates or the CNCs undertaking their doctoral degrees. That real integrated career pathway just doesn’t exist” (Participant [P] 14).

This Pathway, with its multiple levels of support, had the *potential to meet this vision for health facilities*.

The Pathway was perceived as being *comprehensive* and inclusive of many levels of staff, including middle mentors who were perceived as absent currently. “there’s no middle mentoring or support” (P 6).

Table 2
Major and minor themes/categories.

Major themes/categories	Subcategories/subthemes
Current disintegration of the clinician researcher role Implementation	Challenges Existing perceptions of Health consumers Other health professionals Other clinicians Managers and executive staff Universities Strategies Shared vision for health services and universities Harnessing existing champions Language and messaging that connects research to practice Start early with student nurses
Balancing a clinical and research role: need for protected time Reintegrating the clinician and researcher role: growing and stabilising clinician researchers over a generation	Vision unfolding Research experiences transform clinicians' attitudes to research Others acknowledging research engagement Steadfastness in believing in this new reality

Note. Data saturation 63.6%.

The value of *enacting the 'whole trajectory' of the Pathway* (i.e., internships, training, and fellowships), rather than components, was also noted by one participant with there is a “better chance of turning [the Pathway] into something that is sustainable and actually will [work]” (P 20). This need for a comprehensive approach, as demonstrated in the Pathway, addressing all levels of staff concurrently, was essential.

3.3. Themes

The participants often referred to the need for the integration of the clinician researcher role that was perceived as currently disconnected or fragmented. The Pathway was believed to have the potential to reintegrate these roles within health services. Although participants were also circumspect, noting the considerable difficulties of balancing of clinical and research roles and changing existing cultures with implementation. Nonetheless, participants believed the Pathway could lead to real change over an extended period.

Four major themes emerged: (i) Current disintegration of the clinician researcher role, (ii) Implementation, (iii) Balancing a clinical and research role: need for protected time, and (iv) Reintegration of the clinician researcher role: growing and stabilising clinician researchers over a generation (see Table 2).

3.4. Current disintegration of the role of the clinician researcher

Participants described how the clinician researcher role had become disconnected noting that historically the clinician researcher was inherent in the professional role.

“research and clinical work they're separated, yet Florence Nightingale was one of the greatest researchers ever. The whole research and evidence-based practice and the fact that they were so integrated, just seems to be lost” (P 12).

Participants described that no clinician researcher role exists now (referring to bedside clinician researcher level), although participants felt that other disciplines (allied health and medicine) had not experienced this disconnect (P 1, 5).

“I started in my clinical research role, I assumed – ... that I would have so many days in practice and undertake research it was not

possible via the unions to work as a clinician – and it was not okay by the university either and yet all the doctors did. They all had clinical roles and did research” (P 1).

One participant described how they had been told by a manager that research is not required in the clinical area; ... it's got nothing to do with [your current clinical role]” (P 10).

3.5. Implementation

The broad nature of the cultural change required, and the perceived length of time required to achieve such cultural change was daunting. The participants' concerns about the magnitude of the issues to be overcome were embodied in Participant 1's statements, “it's in the implementation, I can see a million stumbles, and later I'm sure we can overcome whatever obstacles arise”. Similarly, another Participant identified the long-term nature of the Pathway vision, “you can't change a culture overnight. It takes a generation” (P 18).

3.5.1. Challenges

Participants described the challenges ahead when implementing this Pathway with an emphasis on *professional practice and inter-professional relationships* (P 20) and perceptions of the role of the nurse. Connected to these relationships, was the need to change existing perceptions of the nurse as a clinician researcher, for health consumers, other health professionals, other clinicians, managers at the ward or executive level, as well as engaging the university (P 1, 6, 8). In addition, workload models and how they are understood by all health professionals were of concern:

“The concept of our model of care at the bedside is very poorly understood by key players in LHDs who make decisions about how people might manage their workload” (P 8).

Workload models that provided constant face-to-face care were unlikely to provide opportunities for focused research work or protected research time away from the bedside. Similarly, changing existing perceptions of managers, other health professionals, of the need for time away from the bedside, was a substantial hurdle if larger numbers of nurses and midwives were to engage in the Pathway.

3.5.2. Strategies

Strategies to support implementation of the Pathway were numerous, including:

creating a shared vision for health services and universities, harnessing existing champions, language and messaging that connects research to practice, and starting early with student nurses. Participants believed that the ‘hardest’ initial part of implementation was to

“get the LHD Directors of Nursing and the Heads of Schools together and get a commitment around the Pathway”... “we have to have a [the] same shared vision” [P 16].

Similarly, sectors need to use limited resources wisely: “Universities and hospitals really do have to work together harder and smarter to make our limited resources go further” [P. 9].

Participants also felt that there were major roles in the change process for most levels of health service staff. Health service leaders believed that other key leaders within the health services could implement the Pathway, such as “operations managers, the managers of the CNCs and NPs [Nurse Practitioners] and CNSs [Clinical Nurse Specialists] group and beyond” (P 16). The role and responsibility of clinicians were also emphasised with “having the clinicians on the ground influence the change [being] critical” (P 6).

Participants described harnessing existing champions within the health service:

“across the system there’s a range of people [who] do understand this and I think we need to harness them and work with them to help us move this kind of approach forward...building confidence...learning how to put evidence into practice,” (P 5).

Other strategies described by participants related to language and messaging that connects research to practice. This strategy was described as being needed to target consumers, different patients, and settings, noting that the:

“core part of every nurse’s role [is] to provide appropriate person-centred care with evidence-based practice as [part] of that conversation” (P 9).

This participant also described how mixed messaging (supporting and not supporting research) occurs, where the “amazing [nursing research] work” being done is not being “celebrated” (P 9). Further to this, whatever messaging is used, it “has to be anchored on improving patient care and outcomes as an endpoint” (P 9).

Although most of the narrative related to the health service, introducing a zeal for research and the potential of the role of clinician researcher to student nurses during their undergraduate program or starting early with student nurses was also emphasised. Participant 2 noted the importance of “teaching of research and letting young undergraduate nursing students know about the possibilities to come.” One participant noted it was essential to have nurses or midwives with research experience teaching research rather than teaching ‘from a textbook’: “When you start talking about the real-life examples of research...the students come alive...” (P 1).

3.6. Balancing a clinical and research role: need for protected time

Considerable discussion focused on the difficulties of balancing a clinical and research role, emphasising the critical aspect of protected time. Participants recalled examples of how protected research time was difficult to maintain when clinical needs existed:

“Most CNCs [Clinical Nurse Consultants] don’t get 20% protected time to do research and the clinical side of it always takes priority.” (P 6).

“I can’t tell you how many times I know of people who, on established secondments into so called protected time, are back on the wards taking a patient load. If you’re doing data collection, it’s very difficult to suddenly do caseloads when you have interviews booked” (P 20).

Others described how securing protected time was an important first step to supporting the Pathway, and how working with managers was essential:

“...trying to find some of that protected time for CNCs now as an initial step in trying to work through the rationale around that with their managers and support them to take the day a week and help the manager understand what benefit that’s going to be to the clinical setting and the patient and the nurses in that team” (P 5).

One participant described the difficulties nurses have in taking time to undertake a PhD:

“[Nurses] really want to do a PhD and they have a really good idea; it’s clinically based from what they have encountered in their work. the thing that stops them is funding. Practically speaking how would they do this on top of an already busy workload?” (P 2).

The difficulties of balancing the roles were further highlighted in existing conjoint positions with two employers:

“What I’ve found in this role is as a joint university and health service position, ...different managers have different expectations and different things they want you to achieve and they’re all probably valid, but it actually puts a lot on the person who’s in that role” (P 2).

“. not least practicalities of two different software systems, two different platforms, two different absolutely everything” (P 20).

“it is about managing two masters and the nature of the roles are always going to have some level of tension we can be more creative than the traditional model” (P 14).

3.7. Reintegrating the clinician and researcher role: growing and stabilising clinician researchers over a generation

The Pathway was viewed as providing a vehicle to create new clinician researchers over time and integrating the practice and research role:

“I think this model lends really nicely to that and the long term would be that you end up getting this whole army of researchers across a broad spectrum, not just in little pockets” (P 6).

“it gets back to that real integration of research and practice at the frontline which I think this framework starts to reconcile” (P 5).

Participants noted that existing research internships (a stream in the Pathway) have been found to change attitudes to research or that research experiences transformed clinicians’ attitudes to research positively. Another participant noted that other research administrators were noticing that nursing and midwifery were increasing their research engagement:

“So, we are now seconding [nurses] to our [research] department but once they go out back into the clinical setting after they’ve finished their rotation, they’ve got a totally different [implied positive] view of research” (P 7).

Similarly, other key stakeholders were identified by participants as accepting the research achievements of nursing and

midwifery and their potential or others acknowledging research engagement.

“I’ve got some really good results and the Director of Research now has met with me twice because... nursing and midwifery is getting organised. We’re moving forward and ... [he said], I want to jump on that because I’m struggling getting medical engagement in some areas, but you’re moving forward and you’re going to be at the table and they’re going to come behind because you’re getting organised, you’re getting grants, you’ve got studies now” (P 16).

Participants articulated how the vision of an implemented Pathway would evolve at the ward level (vision unfolding), when 1 in 10 nurses or midwives have a higher degree in research (target for 2034):

“I think nurses would stop complaining about problems and start coming up with more solutions” (P 5).

“I think once that happens in terms of those clinical nurses having those higher degrees, they will then have the confidence to really drive that kind of translation of evidence into practice. I think that in some ways with that confidence, they won’t be asking for permission, they will just be moving forward... – not just competence, but confidence to do that kind of work” (P 17).

“As long as they’re supported and it’s a good experience for them and it’s productive, it’s a good experience for the ward in what they generate. Then that gets the ball rolling, keeps it rolling” (P 20).

“We give them examples that will interest them, that are do-able and practical, and you give them a Pathway to achieve things, give them examples and you show them people who have done it. You show them where it can go” (P 20).

Finally, the need for continuing support for this major undertaking within the profession was well-articulated by one participant (steadfastness in believing in this new reality):

“There are an awful lot of things in professional practice where people do not actually believe that things have a chance of being a reality, until you have come back to them and come back to them, because anyone can turn up with a brilliant idea and beautiful documents. But things that appear quickly also disappear just as quickly. I think sometimes what you have to do is just accept that you will have to keep going – and that gets you the credibility, that this is something that is professionally important” (P 20).

4. Discussion

In this study, we sought to explore the opinions of senior nurse managers/executives, academics, and clinician academics about the acceptability and utility of a newly developed Pathway to increase the capacity and capability of nurses and midwives to undertake research, and develop new knowledge and implement evidence-based practice within health services.

The Pathway was perceived as both acceptable with strong utility, and to represent a vision that could ultimately deliver increased numbers of clinician researchers, at all levels, within nursing and midwifery. The comprehensive nature of the Pathway, allowing all nurses and midwives access to initial research opportunities, formal training, and then career opportunities, was believed to meet an urgent need within health services. Both the health and university sectors were supportive of a collaborative vision, and subsequent use of limited funds. This Pathway was modelled on the Integrated Clinical Academic Programme (Carrick-Sen et al., 2016), which is managed by the NIHR, and offers all levels of positions. The

requirement to offer all components of the Pathway, rather than selected awards, was emphasised.

Components of the Pathway have already been found to be effective, while others were urgently required. The current practice of ‘seconding’ clinicians into research centres to undertake research was found to transform beliefs and instil interest in research, reflecting the internship category, which has been well-described (Olive et al., 2022). Whilst secondments can be highly valuable, they are usually only available to a limited number of individuals and do not result in a large volume of new clinician researchers. The need for funding to support clinicians to undertake higher degrees in research, such as partial or complete PhD scholarships, was highlighted by these researchers and others (Cowley, Diver, Edgley, & Cooper, 2020). Payment of complete salaries should provide this opportunity.

Although the aim of the study was to determine Pathway acceptability and utility across two sectors, the narrative did unfold, connecting the Pathway, if enacted, to the potential to transform the perceived disconnection (*Theme 1: Current disintegration of the clinician researcher role*) between the clinician and researcher role. Participants believed that this loss of the dual role had occurred, while other health disciplines such as medicine and allied health have retained this combined role and its expectation. We acknowledge that some Clinical Nurse/Midwife Consultants and Nurse Practitioners may hold this position currently (in a partial or complete form), as well as Senior Conjoint Professors and Senior Research Fellows. Participants perceived that the introduction of the Pathway was supportive of the *Reintegration of the clinician and researcher role; growing and stabilising clinician researchers over a generation (Theme 4)*. It was important to understand that change of this nature would require ‘a generation’ to occur.

With this strong support for introducing the Pathway, there was also awareness of the *Challenges* and also *Strategies* available during *Implementation*. The narrative largely focused on the need for cultural change within existing health professionals, as well as health consumers. Aspects of the Normalisation Process Theory (May & Finch, 2009; May et al., 2022), a sociologically-based implementation science theory, frequently used with complex clinical interventions, may provide a framework, with some adaptation, for the introduction of this Pathway within complicated organisations such as health services and universities. The process of implementing a Pathway across two sectors – health services and universities – will require considerable effort and evaluation throughout the implementation phase. Nonetheless, there is an Australian focus on the development of clinician researcher positions across all health professional groups, which is likely to drive this development from a Federal and State health perspective (Australian Academy of Health and Medical Sciences, 2022). Implementation has commenced with a small cohort across the SPHERE Nursing and Midwifery Academy members, using Pathway Ambassadors within health services and universities, and supported by communication tools such as videos presenting the Pathway and clinician stories, soon to be embedded within a dedicated website.

Finding tangible solutions to the problems of the *clinical and research role balance* was described by participants in this study and others (Avery, Westwood, & Richardson, 2022; Baptiste, Whalen, & Goodwin, 2022). After introducing the Integrated Clinical Academic Programme, this obstacle remained prominent (Trusson, Rowley, & Bramley, 2019). The facilitation and management of protected time remain a critical point for the long-term sustainability of the Pathway. The point of difference between nursing, medicine, and allied health is nursing often delivers 24-h direct clinical care. Nursing’s use of caseload models (e.g., team nursing) that are fragmented (different carers within a 24-h period) or task allocation service approaches (Fernandez, Johnson, Tran, & Miranda, 2012), continue to restrict the potential development of clinician researchers. Clinical Nurse Consultants without direct caseload

responsibilities, while retaining development of groups of patients/consumers, continue to provide the best opportunities for managing clinical and research work. Without local or indeed national solutions to this vexing issue, growth in the clinician researcher workforce will be restrained. The participants believed that addressing this issue should commence immediately with the current cohort of Clinical Nurse Consultants who sometimes struggle to receive or protect 20% research time. Perhaps, a National Summit for nurses and midwives and their stakeholders, is required to find innovative solutions and achieve consensus on these matters.

For conjoint positions, the tensions between different health and academic priorities and expectations, are ongoing, and well-articulated (Albert et al., 2022; Carrick-Sen et al., 2019) and require creative solutions, such as agreed workload indicators across sectors.

Participants were able to describe how the Pathway once introduced – vision unfolding – would transform practice. Nurses and midwives with higher research degrees and experience in research would be both capable and confident and would lead important innovative change in practice, that other clinicians and ward managers would acknowledge as beneficial to patient outcomes and practice. The snowballing of this effect across an organisation was believed to deliver evidence-based practice, developed by local clinician researchers, for health consumers.

The participants in this study represented Phase 1 of a series of exploratory interviews. Further research engaging health consumers and other nursing designations (Nursing Unit Managers, Clinical Nurse Consultants/Specialists, Nurse Practitioners, and Clinical Nurse Educators) is planned. Most participants held a PhD, and therefore the findings may reflect a positive bias to the Pathway. The importance of having senior nursing and academic support for a research career pathway has been well documented (Gerrish & Chapman, 2017). This work was conceptualised by the group and some authors were also participants. These qualitative findings may have limited transferability. Investigator bias was minimised by using extended direct quotes. We also acknowledge the complex and important issues of industry awards and role descriptions within varying organisations, which are beyond the scope of this study (Rickard et al., 2011; Smith et al., 2018).

Although the Pathway was developed for the SPHERE network, we acknowledge the importance of this development to NSW and the wider Australian nursing and midwifery profession. Our intention is to initially implement the Pathway within the SPHERE member organisations as a first step.

5. Conclusions

The SPHERE Nursing and Midwifery Clinician Researcher Career Pathway was found acceptable with good utility by these participants and provides direction for reintegration of the role of clinician and researcher noting this may take a generation to transform the culture within our health services. The Pathway is well aligned to national priorities to develop clinician researcher capacity, and to support knowledge translation. To succeed, many challenges need to be overcome, including changes to existing perceptions of clinicians, managers, other health professionals, and consumers. Leadership, appropriate language and messaging, and a shared vision and voice are required from universities and health services. Protected research time remains essential to success, requiring creative solutions using diverse models of care. The Pathway has the potential to grow a nursing and midwifery workforce that can meet the challenges of delivering evidence-based care to health consumers.

Authorship statement

All authors agreed: that the article is their original work. The article has not received prior publication and is not under

consideration for publication elsewhere. They have seen and approved the paper being submitted. They abide by the copyright terms and conditions of Elsevier and the Australian College of Nursing.

CRedit authorship contribution statement

Maree Johnson: Conceptualization, Data acquisition/collection, Formal analysis, Investigation, Methodology, Visualization or Interpretation of data, Supervision, Writing of paper, Writing – review & editing, Writing – original draft. **Caleb Ferguson:** Writing – original draft, Funding acquisition, Conceptualization, Supervision, Investigation, Resources, Writing – review & editing. **Anna Thornton:** Conceptualization, Writing – review & editing. **Joylynn Israel:** Data acquisition, Analysis, Visualization, or Interpretation of data, Writing – original draft, Conceptualization, Writing – review & editing. **Marilyn Cruickshank:** Conceptualization, Writing – review & editing. **Debono Deborah:** Conceptualization, Writing – review & editing. **Ritin Fernandez:** Conceptualization, Writing – review & editing. **Margaret Fry:** Conceptualization, Writing – review & editing. **Louise D Hickman:** Conceptualization, Writing – review & editing. **Annmari Hosie:** Conceptualization, Writing – review & editing. **Sally C Inglis:** Conceptualization, Writing – review & editing. **Gemma McErlean:** Conceptualization, Writing – review & editing. **Elizabeth McInnes:** Conceptualization, Writing – review & editing. **Lin Perry:** Conceptualization, Writing – review & editing. **Suzanne Sheppard-Law:** Conceptualization, Writing – review & editing. **Rochelle Wynne:** Conceptualization, Writing – review & editing. **Mark Parsons:** Conceptualization, Writing – review & editing. **Sandy Middleton:** Writing – original draft, Funding acquisition, Conceptualization, Supervision, Investigation, Resources, Writing – review & editing.

Funding

This study was funded by Maridulu Budyari Gumal – Sydney Partnership for Health, Education, Research & Enterprise (SPHERE), Sydney, New South Wales, Australia.

Ethics approval

Australian Catholic University HREC, Approval Number 2021-175E.

Ethical statement

Ethical approval was obtained from the Australian Catholic University Human Research Ethics Committee Approval Number 2021-175E. Approval was granted on the 28th July 2022. The research conforms to the Declaration of Helsinki.

Conflict of interest

All authors report no conflict of interest related to this paper. No author was involved in the editorial management of this paper.

Declarations

Sally C Inglis is supported by a Heart Foundation Future Leader Fellowship from the Heart Foundation of Australia. Sandy Middleton and Caleb Ferguson are supported by National Health and Medical Research Council Investigator grants. All other authors report no declarations related to this paper.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.collegn.2023.06.002.

References

- ACSQHC (2021). *National Safety and Quality Health Service Standards* (Second edn). Sydney: ACSQHC.
- Albert, N. M., Chipps, E., Klein, C. J., Briskin, I., Falkenberg Olson, A. C., Liu Hand, L., et al. (2022). A cross-sectional study of United States academic-clinical research collaborations: characteristics, resources, benefits and outcomes. *Journal of Clinical Nursing*, 31(3–4), 435–444. <https://doi.org/10.1111/jocn.15597>
- Anderson, M., Molloy, A., Maynou, L., Kyriopoulos, I., McGuire, A., & Mossialos, E. (2023). Evaluation of the NHS England evidence-based interventions programme: a difference-in-difference analysis. *BMJ Qual Saf*, 32(2), 90–99.
- Australian Academy of Health and Medical Sciences (2022). *Research and Innovation as Core Functions in Transforming the Health System: A Vision for the Future of Health in Australia*. Available from: (<https://aahms.org/wp-content/uploads/2022/10/AAHMS-Vision-Report.pdf>).
- Avery, M., Westwood, G., & Richardson, A. (2022). Enablers and barriers to progressing a clinical academic career in nursing, midwifery and allied health professions: a cross sectional survey. *Journal of Clinical Nursing*, 31(3–4), 406–416. <https://doi.org/10.1111/jocn.15673>
- Baptiste, D. L., Whalen, M., & Goodwin, M. (2022). Approaches for establishing and sustaining clinical academic partnerships: a discursive review. *Journal of Clinical Nursing*, 31(3–4), 329–334. <https://doi.org/10.1111/jocn.15830>
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, 2, 8–14. <https://doi.org/10.1016/j.npls.2016.01.001>
- Bletzer, K. V. (2015). Visualizing the qualitative: making sense of written comments from an evaluative satisfaction survey. *Journal of Educational Evaluation for Health Professions*, 12, Article 12. <https://doi.org/10.3352/jeehp.2015.12.12>
- Boaz, A., Hanney, S., Jones, T., & Soper, B. (2015). Does the engagement of clinicians and organisations in research improve healthcare performance: a three-stage review. *BMJ Open*, 5, Article e009415. <https://doi.org/10.1136/bmjopen-2015-009415>
- Carrick-Sen, D., Richardson, A., Moore, A., & Dolan, S. (2016). *Transforming Healthcare Through Clinical Academic Roles in Nursing, Midwifery and Allied Health Professions: A Practical Resource For Healthcare Provider Organisations*. London: AUKUH.
- Carrick-Sen, D., Moore, A., Davidson, P., Gendong, H., & Jackson, D. (2019). International perspectives of nurses, midwives and allied health professionals clinical academic roles: are we at tipping point? *International Journal of Practice-based Learning in Health and Social Care*, 7, 1–15. <https://doi.org/10.18552/ijpbhsc.v7i2.639>
- Cowley, A., Diver, C., Edgley, A., & Cooper, J. (2020). Capitalising on the transformational opportunities of early clinical academic career training for nurses, midwives and allied health professionals. *BMC Medical Education*, 20, Article 418. <https://doi.org/10.1186/s12909-020-02348-2>
- Fernandez, R., Johnson, M., Tran, D. T., & Miranda, C. (2012). Models of care in nursing: a systematic review. *International Journal of Evidence-Based Healthcare*, 10, 324–337. <https://doi.org/10.1111/j.1744-1609.2012.00287.x>
- Finlay, V. (2012). *A Strategy for Developing the Role of the Clinical Academic Researcher in Nursing, Midwifery and Allied Health Professions*. UK: Department of Health.
- Gerrish, K., & Chapman, H. (2017). Implementing clinical academic careers in nursing: an exemplar of a large healthcare organisation in the United Kingdom. *Journal of Research in Nursing*, 22, 214–225. <https://doi.org/10.1177/1744987116689133>
- Henshall, C., Kozłowska, O., Walthall, H., Heinen, A., Smith, R., & Carding, P. (2021). Interventions and strategies aimed at clinical academic pathway development for nurses in the United Kingdom: a systematised review of the literature. *Journal of Clinical Nursing*, 30, 1502–1518. <https://doi.org/10.1111/jocn.15657>
- Hiley, J., Jerwood, J., Price, J., Thomas, S., & Kenkre, J. (2019). Combining a career in clinical practice and research: the benefits at junior career level. *International Journal of Practice-based Learning in Health and Social Care*, 7, 36–46. <https://doi.org/10.18552/ijpbhsc.v7i2.638>
- Hiley, J., Begg, C., Banks, L., Harper, L., Swift, A., & Topping, A. (2018). *West Midlands Clinical Academic Careers Programmes for Nurses, Midwives, Allied Health Professions, Pharmacists and Healthcare Scientists (NMAHPPS)*. (<https://www.birminghamhealthpartners.co.uk/wp-content/uploads/2018/11/West-Mids-Clinical-Academic-Careers-Programmes-Evaluation-Report-Oct-2018-4.pdf>) [Accessed 4 October 2021].
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15, 1277–1288. <https://doi.org/10.1177/1049732305276687>
- Jones, H. C. (2015). Clinical research nurse or nurse researcher? *Nursing Times*, 11, 12–14.
- Lee, S. A., Byth, K., Gifford, J. A., Balasubramanian, M., Fozzard, C. A., Skapetis, T., et al. (2020). Assessment of health research capacity in Western Sydney Local Health District (WSLHD): a study on medical, nursing and allied health professionals. *Journal of Multidisciplinary Healthcare*, 13, 153–163. <https://doi.org/10.2147/JMDH.S222987>
- May, C., & Finch, T. (2009). Implementing, embedding, and integrating practices: an outline of normalization process theory. *Sociology*, 43, 535–554. <https://doi.org/10.1177/0038038509103208>
- May, C. R., Albers, B., Bracher, M., Finch, T. L., Gilbert, A., Girling, M., et al. (2022). Translational framework for implementation evaluation and research: a normalisation process theory coding manual for qualitative research and instrument development. *Implementation Science*, 17, Article 19. <https://doi.org/10.1186/s13012-022-01191-x>
- Newington, L., Wells, M., Adonis, A., Bolton, L., Bolton Saghdouli, L., Coffey, M., et al. (2021). A qualitative systematic review and thematic synthesis exploring the impacts of clinical academic activity by healthcare professionals outside medicine. *BMC Health Services Research*, 21, Article 400. <https://doi.org/10.1186/s12913-021-06354-y>
- NHMRC (2021). *Investigating Clinician Researcher Career Pathways: Summary Report to the NHMRC Chief Executive Officer*. Canberra: National Health and Medical Research Council. NH191.
- Olive, P., Maxton, F., Bell, C. A., Bench, S., Tinkler, L., Jones, S., et al. (2022). Clinical academic research internships: What works for nurses and the wider nursing, midwifery and allied health professional workforce. *Journal of Clinical Nursing*, 31(3–4), 318–328. <https://doi.org/10.1111/jocn.15611>
- QSR International. *Nvivo Software*. (<https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/support-services/nvivo-downloads>) [Accessed 2 March 2022].
- Rickard, C. M., Williams, G., Ray-Barruel, G., Armit, L., Perry, C. J., Like, H., et al. (2011). Towards improved organisational support for nurses working in research roles in the clinical setting: a mixed method investigation. *Collegian*, 18, 165–176.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23, 334–340. [https://doi.org/10.1002/1098-240X\(200008\)23:4<334::AID-NUR9>3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G)
- Smith, S., Gullick, J., Ballard, J., & Perry, L. (2018). Clinician researcher career pathway for registered nurses and midwives: a proposal. *International Journal of Nursing Practice*, 24, Article e12640. <https://doi.org/10.1111/ijn.12640>
- The Chief Public Health Officer (2021). *A Vision to Transform Canada's Public Health System*. ISBN 1924-7087. Public Health Agency of Canada. Retrieved from <https://www.canada.ca/content/dam/phac-aspc/documents/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/state-public-health-canada-2021/cpho-report-eng.pdf> (2021). Accessed 27th June 2023.
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32 item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19, 349–357.
- Trusson, D., Rowley, E., & Bramley, L. (2019). A mixed-methods study of challenges and benefits of clinical academic careers for nurses, midwives and allied health professionals. *BMJ Open*, 9, Article e030595. <https://doi.org/10.1136/bmjopen-2019-030595>
- Upton, D., Upton, P., Erol, L., & Penn, F. (2013). *Phase 1 Evaluation of the Lothian's Nursing Midwifery and Allied Health Professions (NMAHP) Clinical Academic Research Careers (CARC) Scheme*. [Accessed 28 September 2021].
- Westwood, G., Richardson, A., Latter, S., Macleod Clark, J., & Fader, M. (2018). Building clinical academic leadership capacity: sustainability through partnership. *Journal of Research in Nursing*, 23, 346–357. <https://doi.org/10.1177/1744987117748348>