Research Training for Nurses and Midwives

A report on Commonwealth-funded Research Training Scheme places and Australian Postgraduate Awards for nurses and midwives in Australia

The National Nursing and Nursing Education Taskforce (N^3ET)
May 2006

A report on Recommendation 8a of the National Review of Nursing Education (2002) *Our Duty of Care Report*

Australian Health Ministers' Advisory Council

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Prepared by the National Nursing and Nursing Education Taskforce Secretariat.

The National Nursing and Nursing Education Taskforce (N^3ET)

In November 2003, State/Territory and Australian Government Ministers for Education and Health announced the establishment of the National Nursing and Nursing Education Taskforce (N^3ET/the Taskforce).

N^3ET was established to implement and monitor 22 of the 36 recommendations of the National Review of Nursing Education (2002) *Our Duty of Care Report*, along with work from three recent Australian Health Workforce Advisory Committee (AHWAC) nursing workforce reports: *The Critical Care Workforce in Australia 2001-2011* (2002), *The Midwifery Workforce in Australia 2002–2012* (2002), and *Australian Mental Health Nurse Supply, Recruitment and Retention* (2003), in addition to further work regarding nurse specialisation (see **www.nnnet.gov.au**).

N^3ET brings together some of Australia's leading nursing and nursing education and training specialists who have been nominated for their leadership qualities and collective expertise. Members of the Taskforce are supported by a Secretariat located within, and supported by, the Department of Human Services, Victoria.

The Taskforce is "committed to an enhanced and sustainable healthcare system through the promotion of professional visibility and pride, quality education, regulation to nationally-consistent standards, and capacity building in practice, education and research for nurses and midwives across Australia" (National Nursing and Nursing Education Taskforce, 2003).

The Taskforce has the following terms of reference:

- To consider and develop proposals for implementation of the recommendations of the National Review of Nursing Education referred to the Taskforce by AHMC;
- To report to the Australian Health Ministers' Conference (AHMC), the Ministerial Council for Education Employment Training and Youth Affairs (MCEETYA) and the Australian National Training Authority Ministerial Council (ANTA MINCO) on implementation of the National Review of Nursing Education recommendations referred to the Taskforce;
- To consider and provide recommendations on any other nursing workforce or nursing education and training issues referred by the AHMC, such as AHWAC reports;
- To progress and report on implementation of recommendations on any other nursing workforce and nursing education and training issues approved by AHMC that are consistent with the Taskforce's priorities;
- To progress implementation of the above recommendations, including the development and execution of individual projects, under a work plan approved by AHMAC;
- To operate for two years, with continuation being subject to review by Health and Education and Training Ministers.

N³ET Membership

Chair	Adjunct Professor Belinda Moyes
Nominee of the Australian Minister for Health and Ageing	
Ms Rosemary Bryant	Executive Director, Royal College of Nursing, Australia
Nominee of the Australian Minister for Education & Training	
Professor Jill White	Dean, Faculty of Nursing, Midwifery and Health, University of Technology, Sydney
Nominee of the Ministerial Council for Education, Employment, Training and Youth Affairs	
Professor Pauline Nugent	Head, School of Nursing, Deakin University, Victoria
Nominees of State & Territory Health Ministers	
Professor Mary Chiarella	Chief Nursing Officer, Department of Health, NSW (Nov 2003–Jul 2004)
Adjunct Professor Kathy Baker	Chief Nursing Officer, Department of Health, NSW (since Aug 2004)
Ms Fiona Stoker	Principal Nursing Advisor, Department of Health & Human Services, TAS
Nominees of the Australian National Training Authority Ministerial Council	
Ms Katherine Henderson	Deputy Chief Executive Officer, Department of Employment, Education & Training, NT (Nov 2003-Feb 2004)
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Executive Summary

Increased research capacity in nursing and midwifery is essential to delivering optimum health services, developing research-led health policy and improving patient care. Growing awareness of patient safety initiatives, and the critical importance of inter-disciplinary team functioning in ensuring safe and effective care, are compelling reasons to elevate the importance of research capacity in nursing and midwifery as health sector research priorities.

Recommendation 8(a) of the National Review of Nursing Education (2002) *Our Duty of Care Report* focuses on building research capacity in the nursing and midwifery disciplines through Commonwealth support for higher-degree research training. The National Review of Nursing Education recommended that immediate steps be taken to ensure that the level of postgraduate research scholarships and research training places for nurses are at least maintained, with the longer-term target of doubling Research Training Scheme (RTS) commencement load by 2008.

Health Ministers referred Recommendation 8 to the National Nursing and Nursing Education Taskforce (N^3ET), with direction to monitor and report on the implications of the Higher Education Review outcomes in relation to the recommendation and report to Ministers, as soon as appropriate. This report presents the results of the N^3ET's work in this matter and includes the results of a national audit of nursing and midwifery students enrolled in higher degrees by research in Australia, with a specific focus on access to the Australian Government's Research Training Scheme (RTS). To support the audit, work was undertaken to establish the extent and capacity of research training in nursing and midwifery in Australia and to identify the barriers and opportunities that impact on any efforts to increase the number of higher-degree research (HDR) students.

The national audit sought to assess current levels of RTS places and Australian Postgraduate Award (APA) scholarships, and to determine whether the goal of doubling the number of nurses and midwives in RTS-supported places by 2008 was on target to be achieved. Surveying all higher education providers (HEP) of nursing and midwifery nationally, demonstrated that whilst it is not possible to accurately determine the number of higher-degree students by discipline, there are indications of an increase in RTS-supported higher-degree research training and APA scholarships for nurses and midwives since 2002. However, trend data suggests it is unlikely that the proposed target of doubling RTS enrolments by 2008 will be achieved without further strategic intervention.

Currently, Department of Education, Science and Training (DEST) data does not support this level of analysis and the audit undertaken for this report was restricted by the differences in how individual universities track enrolments by discipline, and the lack of a systematic approach to identifying nursing and midwifery students supervised in cross-disciplinary settings, in broad health science programs or those undertaking midwifery and nursing research training in non-related disciplines. It is important to note however, that these issues are not specific to nursing and midwifery, but are system deficiencies that impede accurate determinations of current and potential capacity by any discipline.

As the same issues are likely to affect the quality of the individual organisations' data. It is difficult to make many conclusions about fluctuations in enrolment or RTS funding at an individual organisation, or about the apparently large variations between States without further validation of the data at the institutional level. To collect RTS data at the level of the individual disciplines will require agreement on how issues such as co-supervision are accounted for, but would enable a richer view of the research training activity across and between all disciplines.

Examination of the barriers and opportunities that impact on any efforts to increase the number of higher-degree research (HDR) students, identified that decisions concerning RTS allocation, APA awards and other scholarship support are made at the institutional level, based upon resources allocated centrally to each institution from the Commonwealth, institutional organisational features and the competitiveness of prospective students in all disciplines. While the forthcoming Research Quality Framework will doubtless improve transparency in research infrastructure funding in the long term, it is unlikely that the current complexity associated with research training resource allocation will be affected in the short term.

The report highlights that at a policy level, a number of initiatives need to be put in place to support the disciplines of nursing and midwifery, to develop the national research capacity in a way that addresses issues of importance to Australian health care. A national strategic direction to increase research capacity through research training in the disciplines would need to include a number of inter-related approaches that draw on collaboration and synergy between the disciplines. The mutual and inter-dependant nature of health professionals, higher education, government and health services all need to be accommodated within a national approach. The key features of a national strategic direction to increase the research capacity through research training would therefore address issues such as:

- Identifying and endorsing a vehicle for effective leadership;
- Engaging, collaborating and harnessing the stakeholders collectively and individually;
- Developing sustainable targets for research capacity and training, coupled with effective monitoring of progress;
- Developing a pool of HDR candidates; and
- Enhancement of current support for research training.

Finally, integrating strategies to build research training within a broader strategy that will build research capacity in the disciplines nationally, is of vital importance as research training capacity is integrally linked to research capacity within the disciplines.

Given the length of time taken to create a generation of researchers, it is clear that the original goal of the *Our Duty of Care Report* of doubling the intake and funding by 2008, is unachievable. Efforts to accelerate growth beyond capacity risk a fall in standards, thus working against the ends of building capacity within Australia's health research community through the training and development of nursing and midwifery researchers. The issues of quality, productivity and competitiveness need to be front and centre of any strategic approach to building research capacity in this country.

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Background and Content

To ensure that the Australian public receives the best possible health care, practice-based disciplines, such as nursing and midwifery, have a responsibility to generate strong evidence by sound research to demonstrate the efficacy of contemporary practice and to support changes to policy and practice (Bennett 2006).

Increased research capacity in nursing and midwifery is essential to delivering optimum health services, research-led health policy and improved patient care. Growing awareness of patient safety initiatives and the critical importance of interdisciplinary team functioning to ensure safe and effective patient care, all add impetus to the drive to lift research capacity in nursing and midwifery as health service and health research priorities.

The National Review into Nursing Education (2002) *Our Duty of Care Report*, also recognised that for nursing and midwifery to continue to make a valuable contribution to the health of the community, the disciplines needed to increase the numbers of nurses and midwives in higher-degree research (HDR) training supported by Australian Government funding through schemes such as the Research Training Scheme (RTS) and Australian Postgraduate Award (APA) scholarships.

Our Duty of Care reported that nursing research is poorly represented across all research funding sources and that this is a contributing factor in the lack of Australian-based nursing and midwifery research in the literature. *Our Duty of Care* identified that higher-degree research (HDR) training is essential for nurses and midwives, in order to build a strong research base for the nursing and midwifery disciplines.

Recommendation 8 of the *Our Duty of Care Report* focuses on addressing issues to build the capacity of nurses and midwives to undertake research and utilise research findings in practice[1]. Part a) of Recommendation 8 focuses on building research capacity in the disciplines through Commonwealth support for higher-degree research training for nurses and midwives.

Recommendation 8a – Research and research training for nursing of the National Review of Nursing Education (2002) *Our Duty of Care Report* is:

To build capacity in a vital discipline that has only been in the university sector for a relatively short period:

a) immediate steps should be taken to ensure that the current level of postgraduate research scholarships and research training places for nurses are at least maintained, with the longer-term target of doubling Research Training Scheme (RTS) commencement load by 2008.

The Health Ministers supported this recommendation and referred follow-up work to the National Nursing and Nursing Education Taskforce (N^3ET), with direction to monitor and report on the implications for this recommendation of the Higher Education Review outcomes and report to Ministers as soon as appropriate.

N^3ET has approached this task by conducting an audit of current RTS-supported research training places and APA scholarships for nurses and midwives, the trajectory of RTS places to 2008 and issues affecting the rate of growth in places. N^3ET also aimed to establish the extent and capacity of research training in nursing and midwifery in Australia and what steps the disciplines need to put in place to increase the number of higher-degree research (HDR) students to assist with building research capacity in nursing and midwifery.

[1] Our Duty of Care viewed the development of research skills by nurses and midwives as an investment in the disciplines and targeted building capacity through strategies that included supporting through the research training Research Training Scheme, a strategic approach to building research capacity, identification of national research priorities for nurses and midwives and translation of research findings to practice. This work is the subject of a report by N^3ET found on the N^3ET website at www.nnnet.gov.au

The purpose of this Report is to inform the Commonwealth, State and Territory Health Ministers on the outcomes of this audit. In order to complete this task, the following approach was used:

- An audit of higher-education providers (HEPs) conducting nursing education in Australia, to determine the numbers of nurses and midwives using effective full-time student load EFTSL[2] and effective full-time student unit EFTSU in HDR training funded through the RTS, and the numbers of nurses and midwives awarded APA scholarships;
- A limited literature review on key identified areas to provide background and analysis of the issues;
- A focus group with Deans of Nursing and Midwifery or their representatives, to discuss and clarify issues and strategies for increasing the numbers of nurses and midwives undertaking HDR training supported by the RTS and APA scholarships.

Research Training in Nursing and Midwifery

The transfer of nursing education into the higher-education sector during the 1980's and 1990's, was an important step in the development of nursing and midwifery research training in Australia. The transfer of undergraduate programs provided subsequent opportunities for the transfer of post-graduate specialist programs and from this, consideration of the role of nursing and midwifery schools in the research training of the disciplines.

Nursing and midwifery education was delivered in a context where expectations for the discipline to develop research capacity could be explored. This resulted in a steady growth of nursing and midwifery research and HDR programs in schools of nursing and midwifery across Australia. Prior to this time, nurses and midwives wishing to undertake research higher degrees were required to enrol in non-nursing schools. The positive outcome of this was a diverse research-training base for the discipline, with doctoral-prepared nurses and midwives from areas, such as social science, psychology and medical science.

The down side was an absence of focus on the development of research within the disciplines of nursing and midwifery, and the absence of a critical mass of nursing and midwifery researchers capable of building the research base on which nursing and midwifery practice and policy is developed.

Research Capacity

The link between building research capacity and HDR training is complex. Building research capacity refers to a process of individual and institutional development with the ultimate aim to develop a critical mass of nursing and midwifery researchers able to develop sustainable programs of research. Research capacity has four main components:

- Research capability and competence of the individual researcher;
- Quality of institutional infrastructure to support research activity and research training (Rafferty, Traynor et al. 2003);
- Presence of research focusing on 'country' specific policy formulation and action; and
- The ability to contribute to global research and policy priorities (Trostle 1992, p.1321).

[2] Effective Full-Time Student Load (EFTSL) is a measure of student completions. Effective Full-Time Student Units is a measure of completions. DEST changed its method of reporting student load from EFTSU to EFTSL, mid way through the data collection period for the audit. For the purpose of this discussion, EFTSL has been used to encompass both terms.

It is widely accepted that individual skill development needs to be supported by appropriate infrastructure in a learning environment, and is required to assist nurses and midwives to become competent researchers and build the research capacity of the disciplines. Following an extensive mapping exercise, the UK Centre for Policy in Nursing Research reported on several key factors to help build capacity that included structural support, ie. through financial resources[3]. Infrastructure support is essential as it provides:

- funded research positions;
- access to resources, such as office, laboratory facilities, library, information technology, photocopiers;
- financial support to attend and present work at seminars and conferences nationally and internationally;
- access to structured learning activities;
- thesis supervision by experts to provide mentorship, guidance and direction; and
- student administration, such as administrative support for ethics approval processes and shaping of the thesis (Rafferty and Traynor 2002).

These components provide a context within which nursing and midwifery researchers can build on the skill development commenced as part of their higher-degree research training, through mentoring in a strong research environment. Successful research groups in other disciplines are those with a strong programmatic focus and which feature consistent success in competitive funding, the ability to attract and support post-doctoral researchers and a commitment to research training of the next generation of researchers. Universities with a faculty of medicine often have an established research tradition and host, or have affiliations with, research institutes attracting national and international funding for programs of research. In contrast, schools of nursing are likely to be more newly established and, despite demonstrating an impressive record of building research capacity in a few decades, in the early stages of establishing the programmatic research necessary to provide a supportive and fertile environment for research training.

In other words, research capacity is not built through research training alone, but through a professional and organisational strategic commitment to provide the context within which researchers can build successful research programs, that then become the training grounds for the next generation of researchers.

There is, therefore, an important link between research success generally and the goal of increasing the number of nurses and midwives undertaking higher-degree research training. Investment in one without the other will not achieve the desired results.

[3] Promoting research in nursing and allied health professions: Technical annex. On the research undertaken in nursing, midwifery, health visiting and the 12 allied health professions (AHPs).

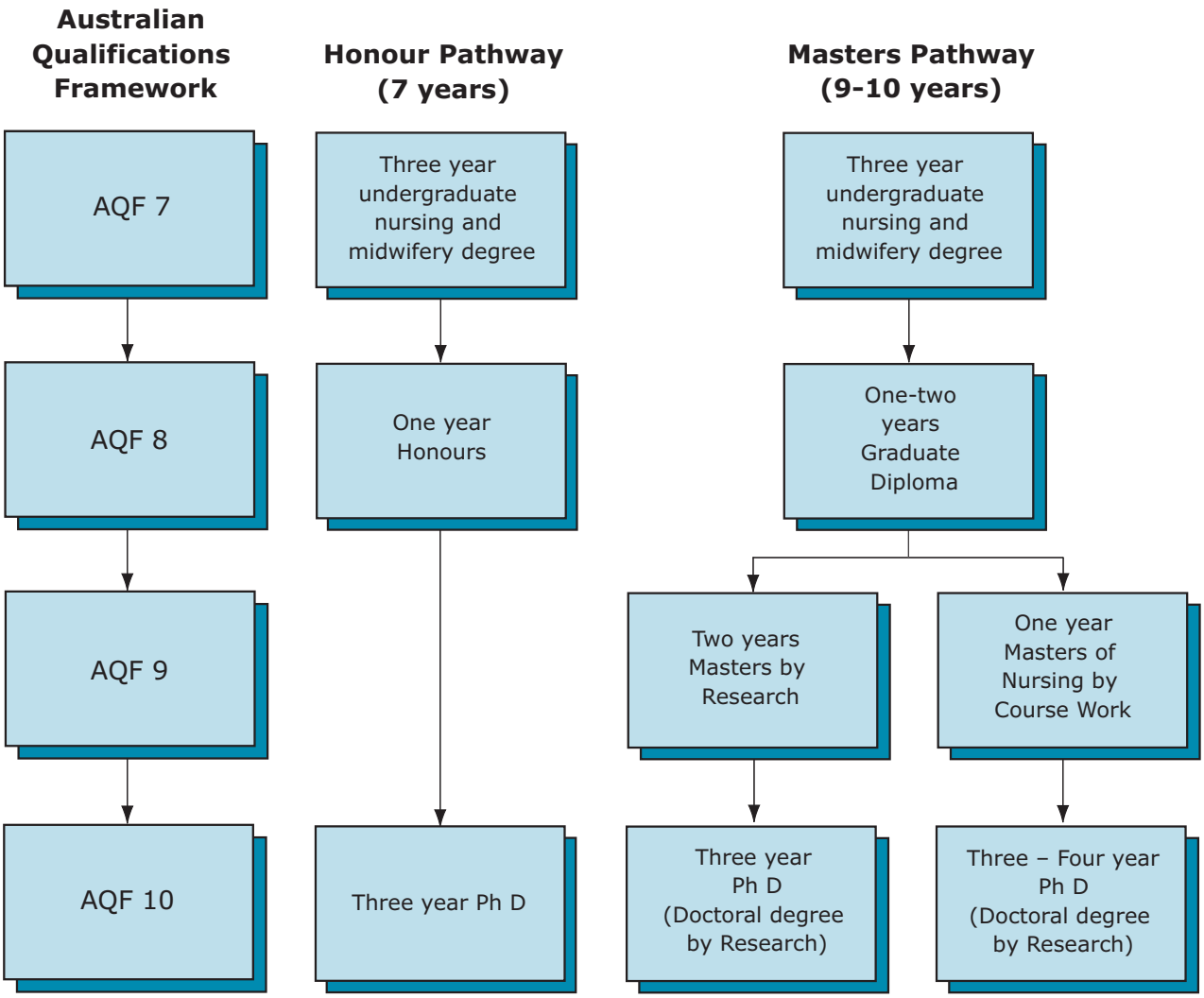
Pathways to higher-degree research training

Higher-degree research training is traditionally understood as occurring through a Doctor of Philosophy (PhD) and masters by research degrees. (However, research doctorate degrees include programs comprising course work up to one-third, eg. some professional doctorate programs.) In established research disciplines, such as science, the entry pathway to a PhD is the honours degree – a fourth year of study undertaken as an additional research year, following an undergraduate coursework degree. Direct entry to a doctoral program is often restricted to honours graduates with a first or second class award and the grading of the degree is used to determine the distribution of scholarships. In nursing and midwifery, the common pathway to HDR training is less traditional and often more protracted. The reasons for this include:

- fewer opportunities for honours programs, as their availability depends on Commonwealth funding support;
- graduate preference to move into practice, rather than study for an additional year on completion of their undergraduate degree;
- difficulties in combining honours study with a full-time graduate or transition program (commonly a one-year program). In some cases, State Government funding for transition programs is contingent on full-time employment, thereby precluding honours study;
- the drive to undertake specialisation education, often supported by State Governments, means that preference is given to undertaking graduate certificates, graduate diplomas and coursework masters degrees with a specialist focus, rather than research training.

Thus, most nurses and midwives enter higher-degree training via either a masters degree by coursework with a minor research thesis, or through a masters by research. This means that in nursing and midwifery, the pathway to a HDR is often longer than for other disciplines as it follows on from specialisation rather than being a career pathway from completion of undergraduate studies. The timelines are compounded by many nurses undertaking their research degrees part-time over 5-8 years, as they are often older at commencement, with more family and work commitments than exist for those taking the more traditional honours pathway[4].

[4] For example, the base salary of a clinical nurse consultant could be $70,000 pa; an APA scholarship provides $19,000 – tax-exempt pa.


Australian Qualifications Framework
Honour Pathway (7 years)
Masters Pathway (9-10 years)
AQF 7
AQF 8
AQF 9
AQF 10
Three year undergraduate nursing and midwifery degree
One year Honours
Three year Ph D
Three year undergraduate nursing and midwifery degree
One-two years Graduate Diploma
Two years Masters by Research
One year Masters of Nursing by Course Work
Three year Ph D (Doctoral degree by Research)
Three – Four year Ph D (Doctoral degree by Research)

Higher-Education Funding Schemes

Higher-education institutions receive support for HDR training through the Australian Government Department of Education, Science and Training (DEST)[5]. Nursing and midwifery access to this support is the direct link between developing research capacity and the numbers of nurses and midwives in HDR training (Rafferty & Traynor 2002).

Historically, in the Australian context, as nursing and midwifery education occurred outside of the higher-education sector until the 1980's, nurses and midwives could only access research training schemes if enrolled in HDR programs offered by other faculties in universities. Hence, funding of HDR training for nurses and midwives is a recent development and follows the establishment of schools of nursing within the higher-education sector.

Since the National Review of Nursing Education (2002), the funding processes for higher-education research training providers have been subject to formal review[6]. While some amendments to the funding structures were introduced in 2005, the evaluation concluded that the reforms introduced through the Australian Government's Knowledge and Innovation Policy (Kemp 1999), were positive changes and well accepted by universities.

Public funding for research and HDR training is provided through several methods as part of the Commonwealth, State and Territory Governments' commitment to research and development. Funding supports students engaged in research training programs in higher-education institutions and provides the infrastructure and resources required to conduct training programs. In addition, HDR students and universities seek funding support through a range of non-government and professional organisations.

From 2005, there are three university-administered sources of support for HDR training:

- The Research Training Scheme – RTS
- The Australian Postgraduate Award – APA
- Other sources

a) The Research Training Scheme – RTS

The Australian Government recognises the costs involved in research training and provides funding for research training directly to higher-education providers under the RTS[7]. The RTS provides block grants, on a calendar year basis, to eligible higher education providers (HEPs) to support research training for students undertaking doctorate degrees by research[8] and masters degrees by research.

The objectives of the RTS are to:

- enhance the quality of research training provision in Australia;
- improve the responsiveness of HEPs to the needs of their research students;
- encourage HEPs to develop their own research training profiles;
- ensure the relevance of research degree programs to labour market requirements; and
- improve the efficiency and effectiveness of research training.

[5] It is acknowledged that some State/Territory governments also provide support to research by funding or co-funding clinical chairs to promote research and research training in targeted areas of interest.

[6] The review was released in May 2004 in the 'Evaluation of the Knowledge and Innovation Reforms' Report.

[7] The RTS was introduced in 2001 and supersedes the Research HECS Exemption Scheme.

[8] A doctoral degree by research may include up to one third course work (see RTS student eligibility criteria http://www.dest.gov.au/NR/rdonlyres/4774ADEE-48AC-40BA-AB2E-51740BD433E6/8916/2006_RTS_STUDENT_ELIGIBILITY_CRITERIA.pdf)

The RTS is distributed to universities on the basis of their previous two years performance, with respect to higher-degree completions, research funding and publications. More specifically, RTS funding is performance based and allocated according to a formula comprising three elements:

- the numbers of research students completing their degree (50%);
- research income (40%); and
- the revised publications measure (10%).

This means that research-intensive universities (those universities who receive the greatest proportion of Australian research income) receive a larger allocation than less research-intensive universities.

While many of these research-intensive universities now have nursing departments/schools, the vast majority of nursing and midwifery schools (26) are located within universities that are not as research intensive and therefore receive less research income to support research activity and training. Many are in newly-established universities (eg. universities that were previously institutes of technology), and are still in the process of building their undergraduate programs and postgraduate offerings.

Recipients of an RTS place are exempt from liability under the Higher Education Contribution Scheme (HECS). The number and categories of students receiving an RTS place may vary each year or semester, depending on enrolment numbers and the availability of RTS-supported HDR enrolments. In general, RTS is distributed evenly across students enrolled in higher-degree studies using a prioritisation system as follows:

- APA scholarship *(high priority)*
- Full-time doctoral degree by research students
- Part-time doctoral degree by research students
- Full-time masters by research students
- Part-time masters by research students *(low priority)*

Students apply to their HEP individually. HEPs have discretion to determine how best to allocate these funds in line with their individual university research priorities. Priorities may change from year to year and while this gives the institutions some flexibility, they may not attract research students to the areas they prioritise, or alternatively, nursing and midwifery research interests may not be included in identified priority areas. Similarly, universities may not have the supervision capacity or infrastructure to support all students who might otherwise be eligible for RTS support. However, it is generally accepted that students with a history of high academic performance are likely to receive RTS support.

The RTS is available to Australian and New Zealand citizens and permanent residents[9] of Australia and funded by the Australian Government's DEST. Students with RTS-supported HDR enrolments are entitled to a maximum of four years full-time equivalent study if undertaking an eligible doctorate degree by research, and a maximum of two years full-time equivalent study if undertaking a masters degree by research, before they become liable for tuition fees. The maximum period of entitlement is calculated from the course commencement date.

[9] Overseas students may enrol in HDR programs, but pay full tuition fees either personally, or though another type of scholarship. They are not eligible to apply for the APA scholarship.

b) The Australian Postgraduate Award – APA

APA scholarships support individual full-time students with a living stipend. This DEST scheme is administered by HEPs according to DEST guidelines[10]. The allocation of APA scholarships provided to each HEP is based on overall research performance of the university.

The main objectives of the APA are to:

- support postgraduate research training in the higher education sector; and
- provide financial support to postgraduate students of exceptional research promise who undertake their higher degree by research full time at an eligible Australian higher education provider.

Application for an APA is made directly to the HEP that has responsibility for determining the selection process by which awards are allocated. APAs are allocated on the basis of student academic excellence and research potential and competition for awards is usually intense. Scholarship recipients usually hold degrees of First Class Honours or equivalent.

The scholarships are available to students eligible to undertake a full-time masters by research or research doctorate degree (or have approval to undertake part-time study[11]), and have completed at least four years of higher-education studies at a high level of achievement; such as a four-year bachelor degree, a three-year bachelor degree plus an honours year (or masters preliminary or equivalent postgraduate diploma), or two three-year degrees. The use of academic results as the basis for ranking APA applicants can disadvantage nursing and midwifery graduates of Master of Nursing coursework degrees that offer ungraded (pass/fail) thesis work[12].

The award includes a stipend and exemption from the payment of tuition fees for a limited time (ie. an RTS-funded place). These scholarships are not transferable to any other institution. The value is $19,231 per annum for 3 years (2006 rate) with a six-month extension possible. Limited relocation expenses may be reimbursed. A thesis allowance is available to support production of the final thesis. Students on full-time APA awards have limitations on the amount of paid work they are able to undertake to ensure adequate progress with their HDR training.

Applicants that are not successful in being awarded an APA may be considered for other scholarships funded by the individual HEP and with similar conditions as the APA.

c) Other sources of HDR support through universities

In addition to APA scholarships, many universities also have internal scholarship schemes to provide living stipends to high-achieving students. These are usually offered at or just below the levels provided under APA. There is also frequently capacity within NHMRC, ARC, Centres of Clinical Research Excellence and other competitive research grants to fund HDR student scholarships. Many nurses and midwives have been successful in obtaining ARC linkage grants with student HDR scholarships attached. Importantly, the NHMRC offers a separate HRD scholarship scheme that is available to the brightest students in a range of disciplines and sometimes in National Health Priority Areas. For example, HDR nurses have been successful in obtaining NHMRC scholarships under the palliative care priority area.

[10] Available on the DEST website: http://www.dest.gov.au/sectors/research_sector/programmes_funding/programme_categories/fellowships_awards_prizes/australian_postgraduate_awards_scheme.htm

[11] This is not common as the applicant is not often successful.

[12] This is also the case for graduates of masters by coursework degrees in other disciplines.

Research students increasingly access funding from other sources (private and external) and enter into industry partnerships. Some HEPs offer scholarships that may be internally administered, that are part of a bequest, or targeted for research in a particular field. These grants/scholarships are often highly-competitive, with research priorities or desired outcomes of the project related, although not directly, to nursing or midwifery practice. It is not clear how many nurses and midwives have been recipients of these grants.

Funding from non-government sources

Apart from tuition fees, the costs to individuals of HDR training are substantial. Smaller amounts of funding are provided to support individuals through a range of sources, such as professional organisations, special interest groups and philanthropic foundations. These funds are usually not equivalent to a salary and most are in the form of a single grant. Non-government organisations (NGOs) may also receive funding through government agencies, such as the NHMRC for targeted research[13].

Nurses and midwives in HDR training commonly seek support from a range of non-government and professional organisation sources such as:

- National nursing organisations, specialist colleges and professional organisations
- Industry/unions
- Regulatory authorities
- Bequests
- Interest groups
- Employers
- Service providers
- Commercial sources

These types of organisations provide funding for targeted research projects that fit within their organisational objectives. Borbasi's (2002) study of nursing research outputs from 1995 to 2000 reported that the predominant funding was from professional nursing organisations. Professional bodies, such as the Royal College of Nursing Australia (RCNA), the College of Nursing (formerly the NSW College of Nursing) and the Australian Nursing Federation (ANF), offer annual grants for research students. While some employers do provide small grants to support research by employees, and provide in-kind support through study leave (usually an industrial award or EBA entitlement), employer support is not a principal source of funding for nurses' and midwives' higher-degree research training, except where this is linked to larger employer-driven research projects[14].

[13] Examples include the Asthma Foundation and State Cancer Councils.

[14] It is, however, acknowledged that State Governments, arguably the largest employer group of nurses and midwives, do provide support to nursing and midwifery research through the funding of clinical chairs; eg. the Victorian Government funds or co-funds a number of clinical chairs in nursing, focusing on areas of state priority.

Professional specialist practice organisations and/or colleges, and groups associated with nursing, such as foundations and philanthropic organisations, offer scholarships for study and grants for research projects and may provide short-term financial support for higher degrees, as well as masters and doctoral students conducting research. For example, the Australian College of Operating Room Nurses (ACORN) offers support in collaboration with industry for targeted research projects. The Royal College of Nursing Australia and the ANF both offer a number of small scholarships and grants (eg. $500 to $10,000). Similarly, the Florence Nightingale Association offers bursaries to assist students to undertake HDR training (to name just a few).

Funding through non-government sources is highly sought after and competitive, and often has accountability clauses and conditions attached that prevent the recipient engaging in paid employment. Funding through these sources may be classed as taxable income.

Self-supporting higher-degree research students

Individual students may self fund their HDR training. At this stage it is uncertain how many nurses and midwives support themselves through means other than scholarships and grants, and their sources may include savings, partners or a combination of these, as well as part-time study with part-time work.

The Proposed Research Quality Framework for Australia

The **Research Quality Framework** (RQF) is a key Australian Government policy initiative, designed by an Expert Advisory Group (EAG) to provide a rigorous framework for accountability for publicly-funded research. The RQF provides the Australian Government, through DEST, with the basis for distributing research funding, ensuring areas of the highest quality of research are rewarded. Thus, the RQF, once implemented, will shift reward funding for research activity from an input model (how much research funding is generated) to an output model, assessing the impact of research in terms of the quality of publications and the influence of the work on the field. This will involve all of the Institutional Grants Scheme and at least fifty per cent of the RTS. At the time of reporting, DEST was conducting a process, with the ARC and the NHMRC, to develop the method by which the outcomes of the RQF will impact on the funding distributed by the research councils.

The EAG has developed the RQF Preferred Model after careful consideration involving the release of two discussion papers – the Quality Framework Issues Paper (Expert Advisory Group for the RQF 2005) and Advanced Approaches Papers (Expert Advisory Group for the RQF 2005). Following Australia-wide consultations and a National Stakeholder Forum with peak research groups, the final advice on the RQF Preferred Model was forwarded to the Minister for consideration early in 2006 (Expert Advisory Group for the RQF 2006). In March 2006, the new Minister for Health, the Hon Julie Bishop, announced her support for the RQF and the establishment of the RQF Development Advisory Group to provide advice on implementation of the preferred model.

Since then, the RQF Development Advisory Group has been formed and a series of scoping workshops has been conducted to develop a preliminary list of appropriate research outputs for the purposes of assessment under the RQF and associated measures of research quality and impact. Before convening discipline-specific workshops, the next step is to draw up overarching RQF Guidelines to guide workshop discussions to develop more detailed input to the draft RQF Guidelines[15].

[15] http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/research_quality_framework/default.htm

It is difficult at this point, to accurately predict the impact of the implementation of the Research Quality Framework (RQF) Preferred Model on research training in nursing and midwifery, but one outcome might be the concentration of research funding in research-intensive universities, leading to a reduction in the number of schools with access to HDR training places. This may in turn result in a short-term reduction in the number of nurses and midwives undertaking higher degrees by research, simply because of a reduction in availability. In the longer term, the field may see a growth in critical mass of HDR students in selected schools of nursing and midwifery where research capacity is developed.

Certainly the impact is likely to vary by school and university if experiences in the UK and New Zealand are any indication. From a positive perspective, in each of these countries the research-mapping exercise has fostered a concerted effort to build research capacity in the disciplines of nursing and midwifery, including an investment in research training and novice researchers (The Centre for Policy in Nursing Research).

The impact of the Research Quality Framework Preferred Model in Australia

The United Kingdom and New Zealand experiences provide some insight into the possible implications for schools of nursing and midwifery. The ISI[16]-based measure of impact and citation for rating journals is an issue that has arisen in Australia, as well as previously in the UK and NZ, where the ISI ranking was not included in their research assessment exercises (RAEs). The number of nursing and midwifery journals indexed by ISI is low, with poor impact factors and the top 20 nursing and midwifery journals do not correlate with the best journals from the perspective of Australian nursing and midwifery. Potentially, a broad panel could evaluate nursing and midwifery research, as apposed to a discipline panel, and the quality of journal publications could be difficult to judge. The Council of Deans of Nursing and Midwifery – Australia and New Zealand (CDNM-ANZ) has therefore proposed a national consensus survey, to rank the top journals for Australian nursing and midwifery as a guide for the RQF (CDNM 2005).

The CDNM-ANZ is confident that in the event of the agreed-upon measures of excellence for the RQF encompassing professional and disciplinary issues common to all the disciplines, then excellence in nursing and midwifery research will be appropriately reflected (2005).

While the RQF Preferred Model has been well received by the CDNM-ANZ and the disciplines in general, given the recent (30 years) transfer of nursing education to the higher-education sector and the infancy of nursing research in Australia, it is likely that some nursing and midwifery schools will feel the impact on their future funding for nursing research, particularly on RTS funding to universities and departments of nursing and midwifery. This is a factor that may impact negatively on the access to RTS-supported enrolments and APA scholarships for nurses and midwives for research training, unless they are prepared to move to universities where such access is available[17] (Australian and New Zealand Council of Deans of Nursing and Midwifery 2005) (Roberts 2003).

[16] ISI identifies the most highly-cited researchers from 21 broad subject categories in life sciences, medicine, physical sciences, engineering and social sciences, who have contributed to the progress of science through their insight and accomplishments. This facility is part of the ISI Web of Knowledge.

[17] Information was largely sourced from the United Kingdom and New Zealand to provide insight into the likely impact.

Methods Used For Data Collection

In recognising that increasing the numbers of nurses and midwives accessing support for HDR training through the RTS is essential to building research capacity in the disciplines of nursing and midwifery, the Health Ministers requested the N^{3}ET report on the numbers of nurses and midwives accessing RTS-supported HDR enrolments and APA scholarships.

This section outlines the work conducted and includes the methods used to collect data. It provides a detailed overview of the three methods used for data collection and is limited to a discussion of these methods, the limitations of the data and related issues. The following section contains a more detailed discussion and analysis of the findings.

Data collection involved an audit of RTS-supported HDR enrolments and APAs, in order to determine the numbers of nurses and midwives holding government-funded places under the RTS scheme and APA scholarships scheme. The original aim was to profile HDR training to determine whether the numbers of nurses and midwives with RTS and APAs is increasing, and whether the target of doubling RTS commencement load by 2008 is likely to be achieved.

The following approach was used to collect and analyse data, to identify issues, and to provide strategic directions to achieve the 2008 targets identified in the *Our Duty of Care Report* (2002):

- An audit of current research scholarships (APA scholarships) and research training places (RTS commencements), the predicted trajectory of places over the next 5 years and issues affecting the rate of growth in places were identified;
- A limited literature review on key identified areas to provide background and context to the Report;
- A focus group of deans of nursing and midwifery or their representatives, to clarify issues and challenges and to identify options and opportunities/strategic directions.

The Audit

A structured audit and questionnaire was distributed by email to universities via the Australian Deans of Nursing and Midwifery during 2005, with the assistance of the CDNM-ANZ Secretariat. The response rate was 100%, following a two-step approach to follow up respondents. This involved direct telephoning of non-respondents by the N^{3}ET personnel, in order to maximize the number of respondents[18].

The audit was designed to capture numerical data in the form of effective full-time student load (EFTSL) for the uptake of APA scholarships and RTS-supported HDR enrolments by nurses and midwives from 2002-2005, and predicted enrolments to 2008. The audit tool also elicited quantitative and qualitative information on issues related to:

- The numbers of nurses and midwives holding research scholarships (APA scholarships) and research training places (RTS commencements) from 2001- 2005[19];
- The predicted trajectory of RTS-supported HDR enrolments and APA scholarships over the next three years to 2008 with schools of nursing and midwifery; and
- Issues affecting the rate of growth in HDR training places for nursing and midwifery.

[18] Variable data quality or funding of scholarships and places was obtained for the year 2001 and this meant that the data analysis in this Report is based on the APA scholarships and RTS funding for the years 2002-2005 and projected data to 2008.

[19] Early advice to the N^{3}ET indicated that providers would have difficulty predicting commencement load numbers for RTS/APA scholarships available for nurses and midwives. It was determined that collecting data on commencements only would be difficult as there may not be differentiation of students in the numbers, so it would be difficult to distinguish for universities. Trends in RTS load have been used as an indicator of commencements, given that RTS is limited.

The National Review of Nursing Education (2002) *Our Duty of Care Report* uses the terms nurse and nursing to refer to registered nurses (and enrolled nurses or Registered Nurses Division 2 in Victoria) and midwives "in whatever capacity they are employed within health, eg. clinical practice, education, management and administration, research, quality, risk management, change management and projects, and government and policy" (p.47).

The Taskforce has been cautious in its response to the recommendations from *Our Duty of Care*, to acknowledge that midwifery is recognised as a distinct professional group within the regulatory frameworks of several jurisdictions. However, in developing this report, it is evident that for the purposes of Commonwealth funding, the Department of Education, Science and Training (DEST) does not distinguish between nursing and midwifery as minor disciplines. The data on RTS load for nursing and midwifery cannot be disaggregated, and is therefore reported together.

Review of the literature

A limited literature review was conducted on key identified areas to provide background and context to the Report[20]. The review also provided a gap analysis that assisted in the identification of issues for consideration by the focus group.

A search of the web and the worldwide literature was conducted through appropriate search engines and key terms that included *research training; research training capacity, research outputs, and research activity*. This was to ascertain the current thinking on HDR training for health professionals including, but not restricted to, the HDR training of nurses and midwives and the impact of the implementation of the RQF Preferred Model.

The literature review raised issues related to:

- **Capacity and capability of the disciplines to conduct HDR training**

  (Rafferty and Traynor 2004; McVicar and Caan 2005; Cowman 2006; Glacken and Chaney 2006; Mccance, Fitzsimons et al. 2006)

- **Strategies to build capacity to support HDR training in the Australian higher-education sector**

  (McVicar and Caan 2005; Office of the Vice-Chancellor University of Melbourne 2006) (Cooke and Green 2000; Dunn and Yates 2001; McMillan, Conway et al. 2002; McMillan 2005; McMillan 2005; McMillan May 20-21, 2005).

- **The experience of other countries in capacity- building initiatives**

  (Wales Office for Research and Development 2005) Proctor 1997, Traynor & Rafferty 1999, McKay 2003;) (Canadian Institute for Health Research 2005) (Canadian Institute for Health Research 2003) (Enemark; Kitson 1997; Glacken and Chaney 2006).

[20] Literature reviews on the topic were carried out by the National Review of Nursing Education and are reported in the *Our Duty of Care Report* (2002).

Focus group

A focus group was conducted in September 2005, which provided the opportunity to consult with eight senior nursing and midwifery academics about the challenges to increasing the numbers of nurses and midwives undertaking HDR training and strategies for achieving the target of doubling RTS commencements by 2008.

Attendees were presented with an annotated map of HDR pathways to trigger discussion. They were asked to reflect on, clarify and discuss issues identified in the literature as barriers to achieving the 2008 target and to discuss strategic approaches to increasing the numbers of nurses and midwives in HDR training[21].

Consideration of the Data

In undertaking this exercise, N^{3}ET is mindful of the following when considering the analysis of the results and strategies:

- Recommendation 8a from *Our Duty of Care* proposed a blunt target of doubling the RTS ***commencement load*** by 2008. However, the methodology for arriving at this target is not evident from the report or its background volumes. Given the small proportion of nurses and midwives undertaking research training, it is likely that the target, although equivalent to a 100% increase for the disciplines over six years, represents a minimal increment in terms of the total RTS scheme.
- Early advice suggested that it is not feasible to disaggregate data on commencement load from measurements of student load at the institutional level. Increases in commencement load will be reflected in increases in overall student load measures over time. This study aimed to collect data on student load as measured by DEST (EFTSL), and not student numbers (head count). It should be noted that during the audit time span, DEST changed its method of calculating student load from EFTSU to EFTSL[22].
- The audit captures only those nurses and midwives identifiable at the university level. A number of universities indicated difficulty in this and therefore declined to project numbers. Those undertaking training in schools/departments of other disciplines, eg. education, human geography, social sciences, psychology, philosophy and anthropology, are not identifiable as nurses or midwives[23]. Research undertaken in fields and disciplines other than nursing and midwifery, impacts greatly on the body of nursing and midwifery knowledge, practice and service delivery, health workforce and health outcomes and should not be disregarded.
- A great many HEPs were unable to make predictions concerning their numbers of higher-degree nurses and midwives for 2006-2008, with RTS-supported HDR enrolments and/or APA scholarships.
- Funding arrangements for students in HDR training changed from the HECS to RTS funding from September 2001. However, transition funding arrangements spanned 2002 to 2004 and corresponded with the audit time span. The APA scheme was also in a period of transition towards new funding arrangements that were fully implemented in 2005. During 2002 to 2004, funding allocations were based on two components, the pre-2002 component and the 2002-onwards component. Funding was reconciled annually to ensure that institutions received sufficient funding to support their pre-2002 student cohort. Previous to 2005, the funding was allocated according to the HECS. Since then, the model for funding has been based on EFTSL, which is based on student completions rather than student enrolments. Interpretation of the data needs to take this into account.

[21] Further national consultation by the N^{3}ET on part b of Recommendation 8: Building research capacity in nursing and midwifery, highlighted widespread concern by nurse and midwife academics about the impact of the RAE/RQF Preferred Model on RTS funding and the impact on funding research infrastructure.

[22] These terms refer to the portion of a full-time study load that is attributable to the unit or units being studied. EFTSU and EFTSL are the acronyms for Equivalent Full-Time Student Units / Load. EFTSL is the new (post Nelson) term for EFTSU, and is definitionally identical. EFTSU and EFTSL are calculated by the formula: total credit points / 200.

[23] This is also supported by comments from one respondent to the audit.

- From the responses to the audit, it is evident that a complete and reliable dataset on this matter is not achievable. Data is unreliable even at an institutional level, for instance, several universities reported that they were unable to differentiate between RTS-funded and non-RTS funded student places; others reported that it was impossible to distinguish nursing and midwifery HDR scholars from those of other disciplines. One HEP reported that information was not readily available for 2001 – 2003, as this was outside the scope of the current database and would require manual searches of archived records.

In addition, a limited validation of data from several respondents indicated inaccuracies and inconsistencies in the data reported. For example, one respondent reported total student numbers rather than EFTSL, while another did not include students enrolled in the professional doctorate program (even though the program qualified for RTS support, having only one-third course work). It is possible that data from other universities carries similar inaccuracies. Other inconsistencies include the reported 0 in RTS places for one provider, while also reporting 3 EFTSL in APA scholarships over the reporting period. Given that in most universities APA scholarship holders also receive an RTS place, this is likely to reflect inaccurate data.

Resourcing for this project has precluded further validation of the data. Hence, at best, the data provides an indicative profile, while the commentary signals issues meriting further consideration for the development of research training capacity.

Section Summary

Data collection involved an audit of nurses and midwives in HDR training with current APA and RTS funding and was conducted with a 100% return, a literature review and a focus group. Despite the high return rate, the data highlights the difficulty in tracking enrolments by discipline in the Australian context. The lack of consistency across the sector results from highly-variable organisational structures and institutional data collection formats. Therefore the data at best provides some indicative information with respect to current status and no projection data of value.

Study Findings

This section contains a discussion of the findings from the analysis of the audit data. The data is limited by individual institutional organisational structures and data collection processes. Furthermore data under discussion includes only nurses and midwives that are enrolled as HDR students in schools of nursing, and not those enrolled in other departments conducting research in related disciplines. It is therefore only indicative data. The research conducted by HDR students may also form part of a joint university industry project and be funded by a joint HEP industry partnership scholarship[24]. These students would have been identified in the data, only if their enrolment was through a school of nursing or midwifery, both in terms of RTS and APA scholarships.

Profiling HDR training for nurses and midwives

Nursing and midwifery programs are offered by a wide range of universities from *research intensive* universities, through to universities with a more recent history, particular those formerly existing as institutes of technology. Historically, those universities of long standing, and with a stronger research focus, have greater access to the infrastructure funding that supports research activity and HDR training at the institutional level.

At the time of the N^{3}ET audit, 34 of Australia's 38 universities offered programs for nurses and/or midwives[25]. All responded to the audit. Of the HEP surveyed, only two (5.8%) did not offer HDR training by research doctorate degree for nurses or midwives through the school/department of nursing and/or midwifery[26]. A number of HEPs provide access to HDR programs for nurses and midwives through several of the institutions' campuses, and several had campuses in more than one state (eg. ACU offers nursing at campuses in three states).

Table 1: Higher-education providers of research training and RN population by State/Territory[27]

State/Territory	HEP of nursing and midwifery programs	Ratio of providers to combined RN & midwifery population	RN Pop 2003-2004	RM Pop 2003-2004	Combined RN and licensed midwife population 2003-2004
Australian Capital Territory	1	1:3902	3,902	N/A*	3,902
New South Wales	11	1:8778	80,560	18,830	99,390
Northern Territory	1	1:2397	2,397*[28]	928	3,325
Queensland	6	1:6684	40,102	41	40,143
South Australia	3	1:6382	19,146[29]	N/A	19,146
Tasmania	1	1:6064	6,064	N/A	6,064
Victoria	7	1:9859	56,161	12,853	69,014
Western Australia	4	1:7236	28,945*	N/A	28,945
Total	**34**	**1:7939** (average ratio)	**237,277**	**32,652**	**269,929**

*Midwives who are not also nurses are registered differently by the Nurse Regulatory Authorities.
Registrations data drawn from State/Territory NRA annual reports (noting that reporting timeframes vary across the states); 2003-2004 is the most current complete data set at the time of reporting.

[24] Funded through the ARC Linkage Projects.
[25] There are a number of other non-university providers of higher education in Australia, but none offer programs in nursing at this point.
[26] Avondale & Murdoch Universities. University of the Sunshine Coast is not included as it has HDR supervision capacity.
[27] RN registrations accessed from Regulatory Board Annual Reports.
[28] 2002-2003 most recent data available.
[29] 2004-2005 data.

Table 1 provides an overview of the number of HEPs providing nursing and midwifery programs, located by State, along with the total number of registered nurses and registered/licensed[30] midwives in each State/Territory[31]. On average, each university in each State collectively provide higher-degrees services to a population of nearly 8,000 nurses and midwives (34 HEPs for 269,929 registrants), although in practice, universities with established schools and research profiles and qualified staff, provide the bulk of research HDR training. Universities may also provide HDR training for students from other States and Territories, as students may enrol specifically to take up a supported HDR place, eg. on an ARC linkage grant, or to work with a supervisor with expertise in their chosen area of study or methodology.

At present, little is known about the proportion of the registered nurse and midwifery population with higher-degree research qualifications; this is not information that is routinely collected by the National Nursing Labour Force Survey (Australian Institute of Health and Welfare 2004). There are also no firm or agreed targets established for the proportion that is required for building the research capability and critical mass in the disciplines. Therefore determining additional resources for research training is both difficult and without foundation. This is also the case for other health disciplines in Australia. However, if measures of impact and research outputs are indications of research capacity, then the nursing and midwifery disciplines (as the largest health workforce group in Australia) need to focus on further developing this area.

Nurses and midwives with APA scholarships and in RTS supported HDR enrolments

Figure 1 provides a breakdown by RTS funding and APA scholarships of the HDR nurses and midwives identified through the audit.

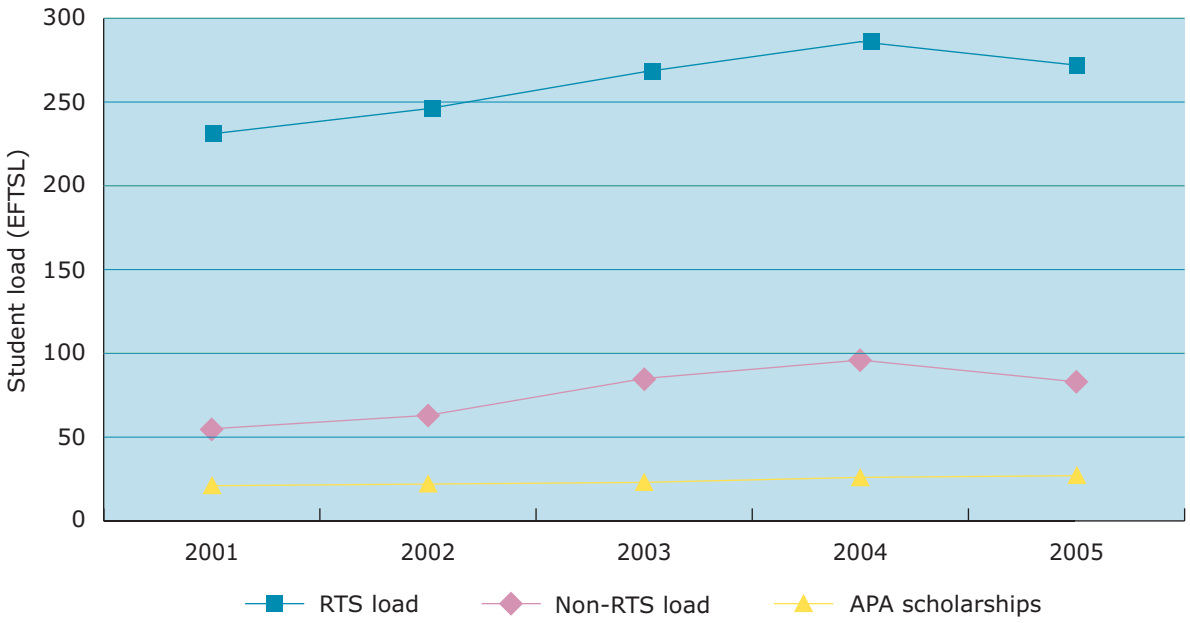
The audit data indicates a gradual increase in RTS load, APA scholarships and also non-RTS supported enrolments since 2002, although this should be considered cautiously due to inconsistencies in data reporting. RTS load rose from 246 EFTSL in 2002 to a peak of 285 EFTSL in 2004, (an increase of 16% over two years). However, 2005 is marked by an unexplained decline in reported RTS load (272 EFTSL). Variations in student load from year to year are to be expected, and it is unclear from this data if the decline marks the beginning of a trend or a single anomaly. The number of APA scholarships awarded to nurses and midwives also increased in 2005 (22 to 27 – an increase of 25%).

The vast majority of HDR nursing students are currently supported by RTS and positively, the total number of RTS-supported places in nursing and midwifery has increased over time, although not to the extent targeted.

[30] Registration, in this Report, will be used to mean licensing in line with State/Territory legislative arrangements.

[31] The data for midwifery reflects the different licensing arrangements for midwives by the State/Territory regulatory authorities; for example in some States all midwives are also registered nurses, while in other States, a midwife who is not also a nurse can be registered in a separate part of the register.

Figure 1: Total numbers of nurses and midwives with RTS and non-RTS supported HDR enrolments (EFTSL) load from 2002-2005



Non-RTS supported HDR students include overseas enrolments and self-funded students, such as those who have exceeded funded time to complete. In some cases, universities carry the costs of supporting such students to completion.

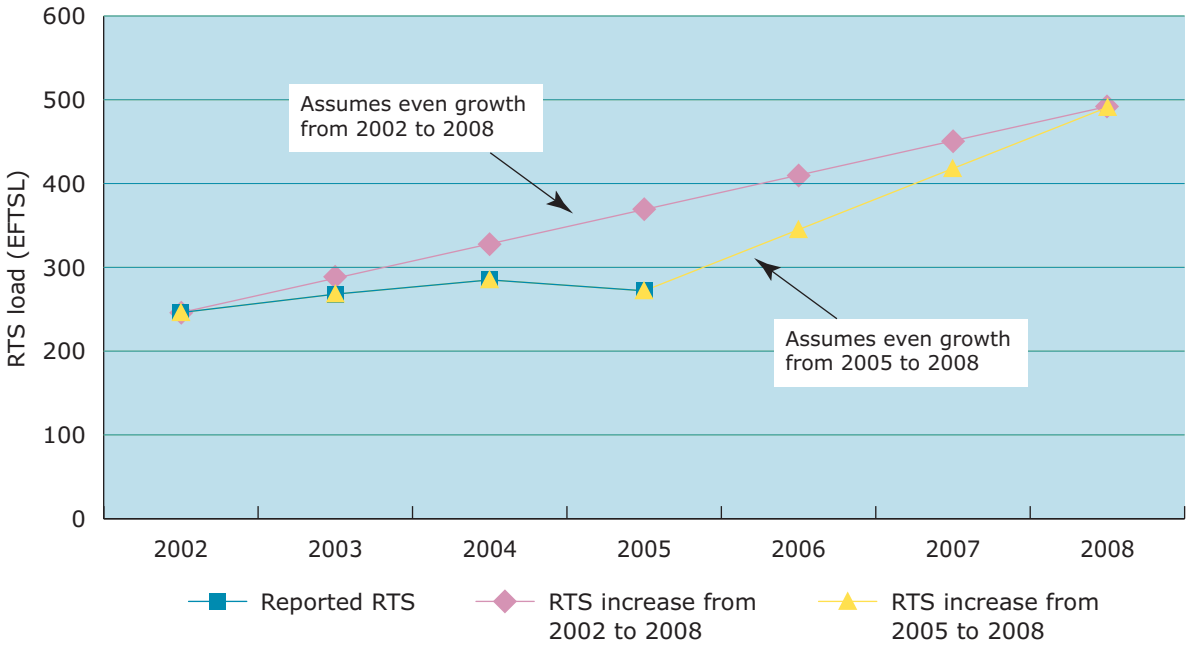
RTS load target for 2008

Our Duty of Care recommended doubling the RTS (commencement) load by 2008. Given that the reported RTS load in 2002 was 246, the target for 2008 is 492. Figure 2 models the rate of RTS growth required to reach the target of doubling RTS load by 2008.

Assuming steady growth, an increase of 17% load (34 EFTSL) per year from 2002 to 2008 was required. That is, by 2005, to be on track to meet the target, RTS load would have needed to be 348 EFTSL. However, reported data shows that growth to 2005, although substantial, has not matched the target growth rate, with RTS load in 2005 totalling 272 EFTSL, or 97 EFTSL below target.

Using 2005 figures as a starting point, to meet the target of 492 EFTSL by 2008, an increase of 73 EFTSL (or 27%) each year will be required. This would be achieved by an additional 0.09% of the RN/midwifery population (or 9 in every 10,000 registrants) taking up HDR training by 2008, (assuming no overall growth in nursing registration numbers by this date).

Figure 2: RTS increases to meet 2008 targets



Non-RTS enrolments

The non-RTS enrolment numbers also grew over the audit data (Figure 1), with a peak in 2004 (97). However, the ratio of RTS to non-RTS places also remained constant at 9-10 non-RTS to 100 RTS places across the audit period. Non-RTS supported enrolments consist of students who have been enrolled too long to still receive RTS support, those students for whom an RTS-funded place was not available and overseas fee-paying students. Overseas fee-paying students could be thought to have a negative impact on supervision capacity. However, this important income source allows universities to increase the total number of staff employed and this will have a flow-on effect for research capability and critical mass. Simply decreasing the places available to overseas students will not necessarily increase supervision capacity, or result in a higher level of enrolment by Australian students, and may result in a perverse effect.

APA scholarships

Figure 1 (p18) shows that the number (head count) of nurses and midwives who were recipients of APA scholarships increased over the time period 2002-2005. This represented roughly 10% (of RTS load) across the audit period. *(It should be noted that APA scholarships are awarded to individuals, usually for full-time study, whereas RTS is measured in EFTSL)*. However, the actual number of APA scholarships awarded to nurses and midwives across Australia is small; 22 in 2002, 23 in 2003, 26 in 2004 and 27 in 2005.

From 2002-2005, there was a 23% increase in nurses and midwives with APA scholarships from 25.5 in 2002 to 29.5 in 2005, although this represents only 9% of all nurses undertaking HDR training under RTS support, or an overall growth of less than 1% in the number of APA scholarships provided to nurses and midwives. The audit data could not capture the total number of nurses and midwives who applied for APA or other forms of scholarship across this time period, as this data is not recorded consistently by institution and may not be recorded at all in some cases. Thus, we cannot speculate whether even this modest 1% increase is a factor of improvement in success, or related to an increase in the total number of applications over time from nurses and midwives.

It is acknowledged that APA scholarships are only one mode of student support. As stated in Section 1, uncaptured in these data are the NHMRC scholarships, ARC linkage grants and CCRE scholarships, all of which provide attractive stipends and which do support nursing and midwifery doctoral and postdoctoral candidates. Likewise, institutions also support doctoral candidates through scholarship schemes that were captured in the audit. As the audit did not collect data on any students receiving these other forms of scholarship, the situation is likely to be a little more positive than this data indicates. For example, ARC scholarships are an important consideration, as nurse academics have had significant success in attracting ARC linkage grants to support research doctorate degree students.

Figure 3: Total numbers of nurses and midwives with APA scholarships from 2002-2008 in each State and Territory

Figure 3 examines the reported APA data by State or Territory. Universities in South Australia and Victoria consistently receive the greatest number of nurses and midwives with APAs. In South Australia, the APA scholarship numbers are fairly consistent across the three universities, although two of the three are generally considered to be *research intensive* universities and the remaining university is also a good research performing institution.

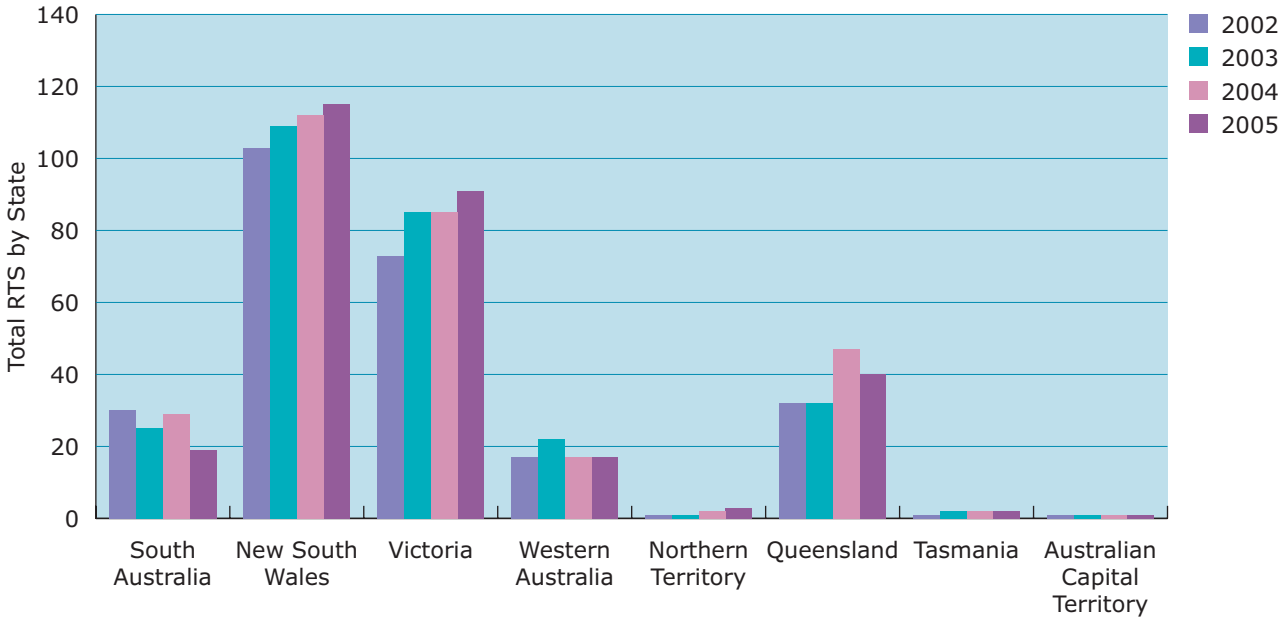
Interestingly, Flinders University reports an average of four APA scholarships per year of the audit, with an average enrolment of RTS students of six. Thus, two in every three enrolled students is APA supported, and in this regard is the best performing of all universities in the audit.

In Victoria, Melbourne University is the largest recipient of APA scholarships for the State, with an average of four scholarships per year, for an average of 22 RTS-supported students or a ratio of one APA scholarship to every five enrolled students.

Deakin University has the best ratio of APA to total RTS enrolments (1 APA to every 2 RTS places), but the reported RTS load is small (and may in fact be underreported). La Trobe University has the largest number of RTS-funded students, but an average ratio of only one scholarship to every 13 RTS places. It is evident that some schools of nursing perform well in relation to APA scholarships for nurses and midwives, and it would be worth considering a closer investigation of these programs to determine the features leading to successful APA applications. One of the obvious similarities between the high performers is that they are situated in universities with a medical school and a corresponding established program of health research. However, this indicator does not necessarily hold true for other HEPs in this data set.

Locating growth and high performance

Figure 4: Total numbers of nurses and midwives with RTS-supported HDR enrolments (EFTSL) load from 2002-2005 in each State and Territory[32]



[32] Non RTS includes full-fee paying international students, it may also include students who have exceeded their 4 year fulltime enrolment. Variable information from HEPs.

Based on reported data, figure 4 provides a more-detailed picture of where growth in RTS-supported HDR enrolments has occurred. However, the reader should bear in mind when reading the following discussion, that due to inconsistencies in the reporting of data, it is likely that RTS load has been underreported by some HEP, and over-reported by others. Hence, no definitive conclusions can be drawn with respect to those institutions that are performing well in terms of RTS load.

Over time, universities in NSW and Victoria have increased their RTS load, although this is not a uniform picture across Australia. NT increased over the audit period, but the numbers remain very small. The enrolments for Queensland, Western Australia and South Australia showed a fluctuating pattern of enrolments over the audit period with both Queensland and South Australia declining by 20-30% between 2004 and 2005. Data provided to the Taskforce does not provide an explanation for regional increases or fluctuations, although access to RTS-supported training located where there is appropriate supervision and research infrastructure, is likely to be a contributing factor.

On the whole, the distribution of RTS appears relatively proportional to registrations (Table 1). However, there are some anomalies. Using 2004 as a reference, ACT, NT and Tasmania combined, had 5% of the registered nurse and midwifery population, but only 2% of the RTS load (and only one HEP in each jurisdiction). On the other hand, Victoria had 26% of the RN/midwifery population while Victorian universities carried 29% of the RTS load. Victoria had seven HEPs, some with nursing offered at more than one campus. Similarly, while SA has 7% of the RN/midwifery population, SA universities carry 10% of the RTS load over three HEPs. On the other hand, WA had 11% of the RN/midwifery population, but only 6% of the RTS load (over four HEPs). This may be a reflection of geographic access to higher education, eg. WA is the largest state in Australia with its population spread across 2,525,500 square kilometres. WA has about 10% of Australia's population and roughly 10.7% of the nursing and midwifery population. There are four HEPs of nursing and midwifery programs, all located in campuses in or close to Perth. About 27% of the population is outside the Perth area (ABS, 2002), so nurses and midwives living and working in the remote and rural regions of WA have more limited access to universities offering HDR training[33].

The overall reported RTS load for HEPs ranged from 0 to 42 for any one year in the audit period. The average enrolments across the four years ranged from 0 to 35 with a median average enrolment of 5.5 EFTSL. Only 9 of the 34 respondents reported higher-degree programs with a student load greater than 10 EFTSL on average across the four years (although there are indications that these figures may be unreliable).

A number of universities appear to be performing relatively strongly with respect to RTS load *(Again this data should be interpreted cautiously)*. That is, they have reported either steady load or increases over the audit timeframe, though it should be noted that three of these reported a decline in load for 2005 (without explanation). These HEPs include, but may not be limited to:

- Curtin University
- La Trobe University
- Melbourne University
- University of Newcastle
- Queensland University of Technology
- Southern Cross University
- University of South Australia
- University of Technology Sydney
- Woollongong

[33] However there are increasing opportunities to pursue higher education by distance, aided by electronic communications and virtual university resources.

A number of smaller universities reported small RTS load, but demonstrated an increase, signalling a gradual increase in the research supervision capacity of the school, and commitment to building the nursing and midwifery research outputs. Two universities reported that as their nursing programs were new, resources were being directed to building the undergraduate program as a source of candidates for post-graduate HDR training.

Trends for 2006–2008

While the trends in the data demonstrate an overall increase in the numbers of nurses and midwives in HDR training, it also appears certain that the target of doubling the RTS commencement load by 2008 will not be met. The overall growth is around 10% across the four years 2002–2005, while the target would require at least 15% growth per year from 2002–2008.

In Section 2 of the audit, HEPs were requested to project their capacity to supervise HDR students. Twenty-four (75%) HEPS[34] responded to the request to predict their EFTSL numbers for 2006-2008, based on their capacity to provide supervision and support along with enrolment trends.

However, ten (32%) HEPs declined or were unable to predict their RTS load for 2006-2008 at the time of data collection for the following reasons:

- The competitive environment for RTS-funded places within HEPs means that nursing and midwifery compete annually with other disciplines for funds and outcomes are not predictable;
- RTS load predictions are dependent on other internal factors, such as supervision capacity within the faculty;
- There is uncertainty around future RTS funding and internal distribution of funding/priorities given the introduction of the RQF (proposed model); and
- There is uncertainty about predicting the number of suitable HDR candidates.

The twenty-four HEPs that provided projections, indicated that projections on indicators for 2006-2008 are based on and give consideration to:

- the known numbers of candidates for 2006;
- the trends from the university;
- the known capacity of the school to provide supervision and support;
- the commitment by the HEP to support growth in the nursing and midwifery research program; and
- future directions of the HEP, ie. in line with organisational/institutional identified research priorities.

A number of HEPs projected numbers based on assumptions of unchanged funding formulae, and the ongoing commitment by their university to support and build research capacity in nursing and midwifery. Given the variable data quality, these projections are of limited value, except to note that a range of factors, including infrastructure funding and faculty capacity to supervise, will affect higher-degree student numbers.

[34] Of the 32 HEPS that provide masters and doctorate degrees by research.

Additional comments about the RTS and APA from higher-degree research training providers

The data from Section 3 of the audit asked respondents to provide additional comments and was completed by 53% of the respondents. These comments have been integrated into the discussion in Section 4 on issues and strategies and the comments were organised according to the themes that emerged from the data:

- The 'suitability' of applicants for HDR training – students are selected into HDR training on the basis of previous academic performance, particularly performance in research methods and academic writing. Thus, not all students wishing to undertake a HDR will be accepted;
- The ability to provide adequate higher-degree supervision – supervision capacity is a function of research training and expertise in the topics and methods to be used by the student;
- Problems obtaining audit data – the data sought for the audit does not exist at a central level and is not consistently reported through the university. Thus, most of the data obtained in this audit would have been manually collected at the school level.

38% of 53% responding to this section, commented about the difficulties obtaining data and also the difficulties differentiating HDR students that are nurses and midwives from other HDR students in the data. It is critical to recognise that this is not a problem specific to nursing and midwifery. DEST does not provide the data by discipline and the manner in which individual universities track enrolments by discipline varies greatly. Furthermore, the data does not capture candidates supervised in cross-disciplinary settings, in broad health science programs or undertaking midwifery and nursing research training in non-nursing or midwifery schools.

Section Summary

This national audit provided a first look at HDR training in nursing and midwifery, and as such, provided important insights that help to inform a strategic approach to increasing the number of higher-degree holders in the disciplines. Despite the difficulties in obtaining accurate data, there is a picture generated of a slow but steady increase in the number of nurses and midwives enrolled in HDR programs, and a consistent proportion of these (9%) holding an APA scholarship.

Reponses to the audit also reveal the breadth of universities providing research training in nursing and midwifery and a wide range in levels of funding support for these students. Given the fact that equivalent studies have not been undertaken by other disciplines, it is difficult to know whether this is the norm or a product of particularities in nursing and midwifery. However, the large number of schools providing HDR training and the average small numbers in many programs, raises important questions about the link between successful HDR training and strong programs of research, such programs are known to be important components of capacity building.

RTS funding is provided to higher-education institutions as a block grant scheme and is not 'tagged' to individual students or tracked by discipline. It is therefore not possible to accurately predict the numbers of nurses and midwives in HDR training for 2006-2008. What is clear from the relative stability of the nursing and midwifery specific indicative data over the period 2002-2005, is that the target of doubling RTS-supported HDR enrolments is unlikely by 2008. The current growth rate is around 10 to 15% per four years, while the required growth rate is 15% per year for each year from 2002–2008.

The Way Forward

Increased research capacity in nursing and midwifery is essential to deliver optimum health services, research-led health policy and improved patient care. Increased awareness of patient safety initiatives and the critical importance of interdisciplinary team functioning to ensure safe and effective patient care, are all reasons to increase research capacity in nursing and midwifery. The *Our Duty of Care Report* importantly identified an increase in the number of nurses and midwives undertaking HDR training as a key step towards achieving research capacity in the disciplines.

Barriers to HDR training and research capacity building in nursing

The motivation to undertake a HDR program begins with a desire to undertake nursing research and, for most nurses and midwives, this links, at least in part, to a desire for a research career. Undertaking the HDR program is a major life commitment with average completion times for full-time doctorate candidates being approximately 4.5 years. In nursing and midwifery, there is an increased likelihood that the candidate will enrol part-time, leading to even longer periods of candidature. In other disciplines, those wishing to develop a career in research will commonly undertake additional training as postdoctoral candidates, consolidating their doctoral work, extending their network of collaborators and building the foundations of their future program of research. These researchers then go on to become successful grant holders and in turn, supervise students of the future and employ others on postdoctoral fellowships. Understanding HDR training in this context is critical to understanding why nursing and midwifery currently struggle in terms of research capacity.

In comparison, few opportunities exist for nurses and midwives to undertake postdoctoral training, either as a self-funding researcher or within a strong program of research. This lack of opportunity limits the extent of the student's research training and as a consequence, reduces opportunities for undertaking a career in research. Where strong research programs exist, nursing and midwifery HDR outcomes begin to approach those in other disciplines, after several years of consistent grant success and a dedicated focus on building researchers of the future.

A further vital consideration is that of quality versus quantity in research training. Consultation raised issues supported in the literature that speak of the need to develop strategies to build depth and competitiveness for funding support – both scholarships and project support, in order to build the capacity in nursing and midwifery to support an expansion in research training. The goal of increased research capacity will only be achieved by training highly-productive and competitive researchers.

Currently in Australia, nursing and midwifery research supervision capacity is simply linked to the presence of an academic with a research higher degree, who may or may not have supervision training. Many of the academics undertaking supervision, do not conduct research and are not part of a strong program of research, with a depth of expertise to support the student's research training. One consideration might be to form consortia of universities to ensure that the appropriate depth of supervision and research expertise is developed to begin to emulate successful HDR programs in other disciplines.

Approaches to capacity building

Despite these clear imperatives, building research capacity requires a long-term vision with clearly operationalised and achievable steps. In comparable countries, such as the United States, Canada and the United Kingdom, the disciplines, policy makers and government have established capacity-building initiatives to support the development of nursing (and in the UK, midwifery) research.

In Australia, while there have been no such initiatives in nursing and midwifery, similar initiatives have been developed in identified priority areas. For example, the NHMRC recently offered Capacity-Building Grants in Population Health Research[35], adopting an approach developed by the Canadian Institutes of Health Research. In Canada, this approach founded a raft of capacity-building initiatives across a number of priority areas, such as nursing, heath services research, cardiac and cancer research[36]. Other Australian initiatives include the program developed by the Australian Government Office for Women, which in 2006 instituted capacity-building grants under a Women's Leadership and Development Program. There is therefore clear evidence in the fields of research and policy, that capacity building requires a targeted and strategic approach to long and medium-term investment in areas of priority. In this vein, a research capacity development program focused on the healthcare needs of the Australian population, possibly in the areas of safety and quality, would offer opportunities for nurses and midwives, along with researchers in other health disciplines, to participate.

The audit and discussion raised many issues relevant to the disciplines and to the health sector, in terms of increasing demand for research-trained nurses and midwives, and support for that training. At a policy level, the key feedback relates to the availability of research funding, specific training funds and capacity-building initiatives. Given that the blunt target of doubling the number of candidates enrolled by 2008 is unlikely without a dedicated funding stream to encourage nurses and midwives into HDR training, a longer-term strategy to develop quality in nursing and midwifery research through training grants, additional program support and priority investment in key areas with existing capacity is critical. These areas would need to be determined. However, a number of criteria, such as numbers of doctorate-prepared nurses and midwives in the field, funded research, publications, and research higher-degree completions – the standard indicators of research activity already recognised by DEST – could be put in place for competitive application.

Further initiatives that have proven highly successful in Canada include the implementation of national research and futures training programs, created to "increase the capacity of Canada's health research enterprise to address important research questions in all areas of health research".[37]

The creation of such initiatives within existing funding streams, or as new program initiatives, or as collaborative ventures with industry and the non-government sector, needs to be advanced, in order to ensure Australian nursing and midwifery researchers receive appropriate levels of training, mentorship and funding opportunities to develop the disciplines of nursing and midwifery, build research-led practice, influence policy and improve patient outcomes.

Towards a national strategy

Based on the experience of established disciplines, there are two key factors essential to the development of long-term research capacity. Firstly, critical mass needs to be established and secondly, there needs to be integration of research findings into practice. Cultivating new researchers through research training is one of the essential elements for building critical mass, hence, schemes such as the RTS and APA scholarships, are crucial forms of support for higher-degree research training for nurses and midwives and should be continued.

[35] NHMRC Capacity Building Grants in Population Health Research. NHMRC.gov.au/funding/types/granttype/strategic/pophealth.htm

[36] Canadian Institutes of Health Research Strategic Training Initiative http://www.cihr-irsc.gc.ca/e/4379.html: CADRES Capacity for Applied and Developmental Research and Evaluation in Health Services Research and Nursing http://www.chsrf.ca/cadre/index_e.php

[37] See for instance the Futures Program at McMaster University, Hamilton, Canada. http://www.fhs.mcmaster.ca/cvnursescientist/about.html

Nursing and midwifery are not alone in struggling to compete against established science disciplines for RTS places, APA scholarships and project funding that assist in supporting higher-degree students through growth in clinical research programs. While the impact of the introduction of the Australian Government's Research Quality Framework is as yet uncertain, ongoing monitoring of its effect on research funding and research training in disciplines such as nursing and midwifery, which are relatively recently established in the higher-education sector, is warranted.

In order to best achieve the goal of increasing research capacity through research training in the disciplines, a **national strategic direction** that is multifaceted and draws on collaboration and synergy between the disciplines, the university sector, the health sector and governments is required. A national strategy should give consideration to the following strategic directions.

Leadership

Strong and focused leadership is needed to drive a national strategy direction for nursing and midwifery research training, to provide high-level coordination and evaluation of arms of activity and to position this work within a broader strategy, targeted at enhancing research capacity in the nursing and midwifery disciplines.

The Taskforce notes that the Council of Deans of Nursing and Midwifery (Australian & New Zealand) has recently established its Research Advisory Group (RAG). RAG membership consists of leading nursing and midwifery researchers from across Australia and New Zealand who will assume responsibility for research leadership, in response to the Australian Government's Research Quality Framework (RQF) and New Zealand's Performance-Based Research Fund.

This group is well positioned to take carriage of the broader national agenda for nursing and midwifery research, to consult with the research community within and beyond the university sector, and to speak on behalf of the disciplines on matters related to research priorities, research training and measures to support research capacity building in the future.

Collaboration, consultation and communication

A strategic direction would include engaging the nurses and midwives, the university sector and their professional organisations, the health sector/employers and governments in the development of a long-term (10-year) strategic plan (including priority actions and an implementation plan), aimed at building research capacity through research training initiatives targeting nurses and midwives. Elements of the plan should include:

- Strategies to engage the disciplines in the steerage of this initiative, and for working in partnerships with key stakeholders to achieve successful growth in research training;
- Identifying and harnessing the human capital of successful groups of researchers that currently achieve excellent research training and research outcomes;
- Strategies to engage industry, government, professional and philanthropic organisations in partnership to support research training for nurses and midwives, through various forms of support for research activity and training, eg. scholarships and research grants. This may include providing strategic direction to guide awarding scholarships and research grants;

- A longer-term plan for working collaboratively with health services and employers, unions and State Governments to develop, recognise and reward roles for clinical research nurses and midwives;
- National leadership programs building on areas of current and proven research strength, and with the capacity to support a national network of researchers (such as palliative care, critical care, and midwifery), in this way promoting coalitions, collaborations and partnership projects and providing fertile ground for research training.

Sustainable targets for research capacity and training

Sustainable growth in research training is inextricably linked to growth in critical mass. A strategic direction would include:

- A methodology for establishing and evaluating progress towards the target proportion of all nurses and midwives, who require higher degrees by research, in order to ensure the disciplines' capacity to support the clinical research needs of nurses and midwives;
- A coordinated approach to monitoring and evaluating the outcomes and impact of the RQF on research training for the nursing and midwifery disciplines, and for engaging with the ongoing evaluation and development processes for the RQF at a national level.

Developing the pool of higher-degree research training candidates

Schools of nursing and midwifery, academics and research leaders should work collaboratively to enhance the opportunities for and quality of HDR training programs in nursing and midwifery by:

- Improving exposure of undergraduate students to clinical research expertise through involvement of clinical researchers in the teaching programs;
- Targeting high-performing undergraduate students for research mentorship and early entry into honours and masters by research programs;
- Improved communication to future students of the criteria and application process for HDR scholarships;
- Evaluation of current research teaching programs and how to improve these to encourage research as a career pathway in nursing and midwifery;
- Establishing a system to monitor funding opportunities that support capacity building and working collectively to enhance nursing and midwifery capacity to achieve funding through these schemes;
- Establishing an agreed set of graduate capabilities for nurses and midwives on completion of HDR training at Masters and Doctorate levels;
- Collaborating on the development of research supervision capacity through sharing of resources and expertise and mentoring.

Support for research training

Nurses and midwives comprise the largest health professional workforce group and with growth in research capacity, offer enormous potential in terms of research productivity to inform evidence-based practice and improved service and health outcomes. As both State and Federal Governments have principal interests in the health of Australians and are arguably the largest employers of nurses and midwives, there is a compelling argument for governments to invest in building research capacity in the disciplines by:

- Continuing to support research training through the **Research Training Scheme and Australian Postgraduate Award** scholarships;
- Responding to evaluation of the RQF, in the event of evidence emerging of a decline in research activity, productivity or capacity for research training in the disciplines;
- Continuing and broadening funding by State/Territory Governments for clinical chair positions in priority health areas to promote clinical research and research training;
- Providing scholarships/grants and other sources of funding to support higher-degree research training, where researcher interest is in an area of National Health Priority;
- Reviewing State/Territory funding policy for graduate transition programs, so that programs can be developed that blend new graduate transition with honours requirements, thereby promoting a pathway to research training.

Universities and schools of nursing and midwifery can assist this effort by:

- Implementing university/school-based grants for higher-degree research students, where research interests align with identified university priorities or build on the school's program of research;
- Providing opportunities for higher-degree research students to work on programs of funding research, and providing mentoring to assist in development of track record in the early stages of a research career;
- Exploring opportunities and models for pooling resources to develop schemes such as national summer research fellowships for undergraduate students, awarded on merit, as an early introduction to clinical research;
- Strengthening cross-disciplinary and collaborative research and research training, and partnerships with industry to promote research training opportunities.

Employers and health services providers stand to benefit from the findings of nursing and midwifery research, especially where research targets identified clinical issues and results in improved outcomes for patients and organisations. There is opportunity for health service providers to strengthen commitment to research training by:

- Providing grants and scholarships to employees for higher-degree research training, where the research interest targets local research priorities;
- Providing training opportunities linked to larger service-based programs of research; and
- Developing linkages with universities and other industry partners, aimed at sponsoring and supporting higher-degree research students where research is across multiple sites.

A broader strategy of building research capacity in the disciplines

Importantly, a national strategic direction for building capacity in research training would form one part of a broader national strategy, aimed at building viable longer-term research capacity in the nursing and midwifery disciplines.

A broader strategy would draw on the ***Priorities for Nursing and Midwifery Research in Australia*** (2006) developed by the National Nursing and Nursing Education Taskforce through a national consultation process:

Priority 1 **Contributing to research on National Health Priority Areas**

Priority 2 **Developing a research critical mass**

Priority 3 **Growing generations of researchers**

Priority 4 **Translating research into practice**

The National Priorities provide a cohesive and agreed focus for developing nursing and midwifery research capacity and a guide to future investment in nursing and midwifery research activity[38]. It is only through building research capacity, that the nursing and midwifery disciplines will be able to respond to national directions in health and research, and thereby contribute to improving management of health conditions and service delivery in the Australian and international context.

[38] The Priorities for Nursing and Midwifery Research in Australia report is available from the N³ET website www.nnnet.gov.au

Conclusion

This project aimed to establish the extent and capacity of research training in nursing and midwifery in Australia, to assess progress and recommend strategies to achieve the target set by the National Review of Nursing Education (2002) *Our Duty of Care Report* of double RTS-supported HDR places by 2008.

The national audit undertaken by the N^3ET identified a slow, but steady, increase in RTS places in nursing and midwifery and a steady achievement of APA scholarships. Despite the significant difficulties in obtaining accurate data, the audit provides a national overview from which a strategic approach to increasing the number of HDR students in nursing and midwifery can be developed.

There were also several factors that threaten the goal of increasing the number of HDR students in nursing and midwifery that need to be actively approached by the disciplines. Firstly, the expertise in research and research supervision is spread across many universities offering small HDR programs. The disciplines need to consider ways in which this expertise can be brought together in a collaborative effort. Secondly, the forthcoming RQF may result in some schools of nursing losing access to RTS funding as the system shifts from research inputs to research outputs, and impact as the funding drivers. If this occurs, it will be yet another incentive to develop research collaborations across institutions, in order to maximise nursing and midwifery capacity to meet RQF expectations.

Finally, the focus group raised issues, supported in the literature, on the need for nursing and midwifery to develop strategies to build depth in research training and competitiveness for funding support – both through scholarships and project support, in order to build capacity in nursing and midwifery to support an expansion in research training. This development will also require high levels of collaboration and a shift from the current competitive relationship that exists between institutions.

On a broader note, successful research groups in all disciplines are those with a strong programmatic focus and that feature consistent success in competitive funding, the ability to attract and support post-doctoral researchers and a commitment to research training of the next generation of researchers. In other words, research capacity is not built through research training alone, but through a professional and organisational strategic commitment to provide the context within which researchers can build successful research programs that then become the training grounds for the next generation of researchers.

There is, therefore, an important link between research success generally and the goal of increasing the number of nurses and midwives undertaking higher-degree research training. Investment in one without the other will not achieve the desired results. Higher-degree training is a large personal investment that makes little sense if the career pathways are not established to encourage nurses and midwives to make this investment.

At a policy level, a number of initiatives need to be set in place to support the disciplines of nursing and midwifery to develop the national research capacity to address issues of importance to Australian health care. Given the length of time taken to create a generation of researchers, it is clear that the goal of doubling the intake and funding by 2008 is unlikely to be achieved. Efforts to accelerate growth beyond capacity risk a fall in standards, thus, success requires a dual commitment to development of research depth and increasing research training. The issues of quality, productivity and competitiveness need to be front and centre of any strategic approach to building research capacity in this country.

The audit and discussion raised many issues relevant to the disciplines and to the health sector, in terms of increasing demand for research-trained nurses and midwives and support for that training. At a policy level, any strategy to build research training capacity needs to address the critical issue of availability of research funding, specific training funds and capacity-building initiatives. Given that the blunt target of doubling the number of candidates enrolled by 2008 is unlikely, a longer-term strategy to develop quality in nursing and midwifery research through training grants, additional program support and priority investment in key areas with existing capacity is clearly warranted. It is important, however, that standard measures of productivity and excellence, already recognised by DEST, be maintained, ie: funded research, publications, research higher-degree completions. Only in this way, can a cohort of competitive researchers be developed.

Further initiatives that have proven highly successful in comparative countries, and that are currently supported in areas of research training priority in Australia, include the implementation of national research and futures training programs, postdoctoral training programs, combined industry and government funding programs, and national mentorship programs. Critical to these successful initiatives, is an awareness of the need to support successful researchers to build stronger research teams, mentor novice researchers and create sustainable national networks of researchers in discrete areas. Clearly, a plan to implement similar strategies in Australia needs to be put in place by the disciplines.

In order to best achieve the goal of increasing research capacity through research training in the disciplines, a multifaceted **national strategy** that draws on collaboration and synergy between the disciplines, the university sector, the health sector and governments is required. A national strategy should give consideration to the following:

- Strong and focused leadership to drive a national strategy direction for nursing and midwifery research training;
- Collaboration, consultation and communication engaging nurses and midwives, the university sector and their professional organisations, the health sector/employers and governments in the development of a long-term strategic plan for building research training
- Sustainable targets for research capacity and training
- Developing the pool of higher-degree research training candidates
- Support for research training.

Importantly, a national strategy for building capacity in research training would form one part of a broader national strategy aimed at building viable longer-term research capacity in the nursing and midwifery disciplines. It is only through building research capacity that the nursing and midwifery disciplines will be able to respond to national directions in health and research, and thereby contribute to improving management of health conditions and service delivery in the Australian and international context.

Appendices

Appendix 1: List of Acronyms

ANMC	Australian Nursing and Midwifery Council
APA	Australian Postgraduate Award
DEST	Department of Education Science and Training (Commonwealth)
HECS	Higher Education Contribution Scheme
HEP	Higher education provider
HES	Higher education sector
HSP	Health service provider
N^3ET	National Nursing and Nursing Education Taskforce
RTS	Research Training Scheme

Appendix 2: Respondents

University Name	Abbreviation	Website	
The University of Adelaide	Adelaide	www.adelaide.edu.au	SA
Australian Catholic University	ACU National	www.acu.edu.au	Vic, NSW, QLD
University of Ballarat	UB	www.ballarat.edu.au	Vic
University of Canberra	UC	www.canberra.edu.au	ACT
Central Queensland University	CQU	www.cqu.edu.au	QLD
Charles Darwin University	CDU	www.cdu.edu.au	NT
Charles Sturt University	CSU	www.csu.edu.au	NSW
Curtin University of Technology	Curtin	www.curtin.edu.au	WA
Deakin University	Deakin	www.deakin.edu.au	Vic
Edith Cowan University	ECU	www.ecu.edu.au	WA
Flinders University	Flinders	www.flinders.edu.au	SA
James Cook University	JCU	www.jcu.edu.au	NSW
La Trobe University	La Trobe	www.latrobe.edu.au	Vic
The University of Melbourne	Melbourne	www.unimelb.edu.au	Vic
Monash University	Monash	www.monash.edu.au	Vic
Murdoch University	Murdoch	www.murdoch.edu.au	WA
The University of New England	UNE	www.une.edu.au	NSW
The University of Newcastle	UoN	www.newcastle.edu.au	NSW
The University of Notre Dame			NSW/WA
The University of Queensland	UQ	www.uq.edu.au	QLD
Queensland University of Technology	QUT	www.qut.edu.au	QLD
RMIT University	RMIT	www.rmit.edu.au	Vic
University of South Australia	UniSA	www.unisa.edu.au	SA
University of Southern Queensland	USQ	www.usq.edu.au	QLD
University of the Sunshine Coast	USC	www.usc.edu.au	QLD
The University of Sydney	Sydney	www.usyd.edu.au	NSW
University of Tasmania	UTAS	www.utas.edu.au	Tas
University of Technology Sydney	UTS	www.uts.edu.au	NSW
Victoria University	VU	www.vu.edu.au	Vic
University of Western Sydney	UWS	www.uws.edu.au	NSW
University of Wollongong	UOW	www.uow.edu.au	NSW

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