Department of Health

Australia's Future Health Workforce Report – Midwives

2019

Table of Contents

Table of Figures

Report Overview

Australia's Future Health Workforce Report – Midwives 2019 (AFHWR – Midwives 2019) updates the first iteration of midwifery supply and demand projections conducted by Health Workforce Australia in the Health Workforce (HW) 2025 Volume 1 report. It also addresses the concerns around data limitations and methodology of Health HW 2025 Volume 1 expressed by midwifery professionals. This process involved consultation with key stakeholders in relation to both the supply and demand methodology previously used and the improved data and methodologies adopted to determine the future midwifery workforce.

In this report changes to registration data collection and the labour force survey since the commencement of the national registration and accreditation scheme have improved the accuracy of the figures for midwifery supply. Demand, which was previously calculated using birth rate, has been calculated using a midwifery continuity of care approach although it is acknowledged that the midwifery hours of care required varies according to the model of care. It is further acknowledged that supply and demand are subject to local variation.

The development of AFHWR – Midwives 2019 has been overseen by the National Nursing and Midwifery Education Advisory Network (NNMEAN) with advice from the Midwifery Technical Advisory Group (MTAG). MTAG was formed to approve the methodology for the supply and demand modelling, and its membership comprised public, private and rural providers with technical industry knowledge.

Key Findings

Continuity of care (baseline) scenario

Using the continuity of care demand rate of 2.53% with no adjustments to supply, the midwifery workforce is in balance (±3 per cent) across the projection period.

Population growth

Using a population growth demand rate of 1.6% with no adjustments to supply, the midwifery workforce is in oversupply throughout the projection period of 12 per cent in 2030.

Increased hours worked

Using the continuity of care demand rate of 2.53%, and adjusting the supply by increasing all midwives hours by an additional 4.5 hours, the midwifery workforce is in oversupply by 2030 of 16 per cent.

Jurisdictional findings

Feedback from the jurisdictions (Appendix B) supports the national projections of a profession in balance from a supply perspective. However, the jurisdictions also report maldistribution in rural and regional areas with unfilled vacancies and difficulties recruiting. The Northern Territory also reports seasonal variations in supply and the ACT reports difficulty recruiting experienced midwives.

Jurisdictions have in place national and international recruitment strategies and are offering a range of incentives including rural scholarships and midwifery-led units in regional areas to address their distribution issues.

Some jurisdictions also report retention issues associated with newly educated midwives who are seeking to work in continuity of care models. The demand from midwives for jobs in caseload midwifery is higher than capacity which suggests a conflict between service delivery models and the current accredited education programs.

Jurisdictions are developing midwifery group practices and career pathways to address these issues of retention.

Recommendations

On the basis of the national and jurisdictional findings, the report recommends:

- updating the workforce modelling results to determine requirements for future adjustments every two years;
- prioritising future policy work to address issues of maldistribution and retention;
- services continue to increase the availability of midwifery continuity of care models so that midwives are able to fully utilise their education and training; and
- service and education providers collaborate to ensure that education and services are better aligned.

Introduction

Midwifery is a profession grounded in woman-centred and evidence-based maternal health care for the woman. Midwifery is provided through professional relationships and respectful partnerships. The midwife, as registered by the Nursing and Midwifery Board of Australia (NMBA) and defined by the International Confederation of Midwives 2017 (ICM), is educated, competent and authorised to provide safe, effective delivery of quality services that promote health and wellbeing for pregnancy, birth, the postnatal period and transition to parenting.

The midwife is responsible and accountable for maintaining their capability for midwifery practice that may include:

- providing women's health support, care and advice before conception, during pregnancy, labour, birth and the postnatal period;
- promoting normal physiological childbirth and identifying complications for the woman and her baby;
- consultation with and referral to medical care or other appropriate assistance; and
- implementing emergency measures (ICM).

Using the principles of midwifery continuity of care, primary health care and cultural safety, the midwife provides health counselling and education, which may include preparation for childbirth and parenthood. The midwife's practice may extend to women's health, reproductive and sexual health, and child and family health care (International Confederation of Midwives 2017).

The midwife works with the woman and her baby, partner and family as identified and negotiated by the woman herself. The woman may be healthy or have health issues, or other challenges such as social disadvantage. The midwife is also responsible for their practice within the broader health system. Where relevant, this involves collaboration, consultation and referral to other services or health practitioners.

In Australia, the Health Practitioner Regulation National Law, as in force in each state and territory (the National Law) protects the title 'midwife'. A midwife is a regulated health practitioner who holds registration as a midwife with the Nursing and Midwifery Board of Australia.

Midwifery is not restricted to the provision of direct clinical care. Midwifery practice extends to any role where the midwife uses midwifery skills and knowledge. This practice includes working in clinical and non-clinical relationships with the woman and other clients as well as working in management, administration, education, research, advisory, regulatory, and policy development roles.

Midwives recognise the importance of history and culture to the health and wellbeing of women and their families. Midwifery practice promotes culturally safe care as a fundamental right for all women. Midwives acknowledge the impact of colonisation on the lives of Aboriginal and Torres Strait Islander peoples, which has contributed to significant health inequity in Australia.[1]

[1] https://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/Professional-standards/Midwife-standards-for-practice.aspx

Current workforce status

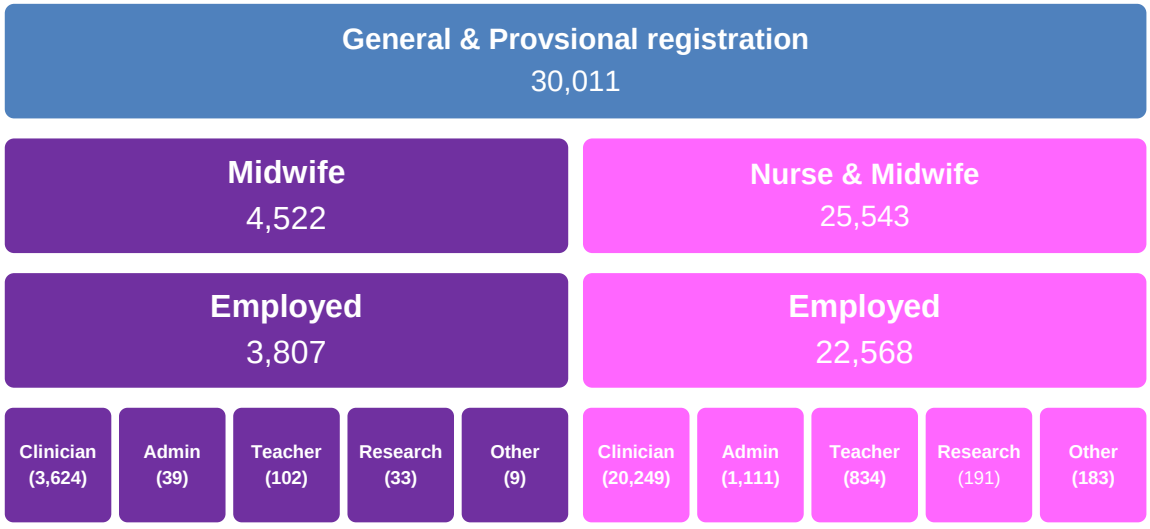
Registration

All midwives in Australia must be registered through the NMBA and meet the NMBA's registration standards before they are able to practise. These include:

- a minimum of 20 hours continuing professional development per registration period (plus a further 10 hours for midwives with a notation and/or scheduled medicines endorsement);
- recency of practice by demonstrating one or more of the following: completion of a minimum of 450 hours of practice within the past five years, successful completion of a program or assessment approved by the NMBA and/or successful completion of a period of supervised practice approved by the NMBA);
- declaration of criminal history (including international criminal history checks, if required);
- evidence of suitable English language skills; and
- evidence of current professional indemnity insurance coverage.

The Australian Health Practitioner Regulation Agency (AHPRA), in conjunction with the national boards, is responsible for the national registration process for 16 health professions. The data from this annual registration process, together with data from a voluntary workforce survey completed at the time of registration, forms the National Health Workforce Dataset (NHWDS). Data in the NHWDS includes demographic and employment information for registered health professionals.

Figure 1: Midwifery workforce, 2017



Source: NHWDS, Nursing and Midwifery 2017

Midwives need to be registered to be employed in Australia, however, not all those who are registered are employed. The data presented in this report focuses only on those registered midwives who reported working in midwifery (referred to as 'employed midwives').

The *NHWDS: Nurses and midwives 2017*, was used to determine the midwifery supply in Australia. The following describes which individual responses were selected for inclusion in the data set used for this report based on answers in the workforce survey:

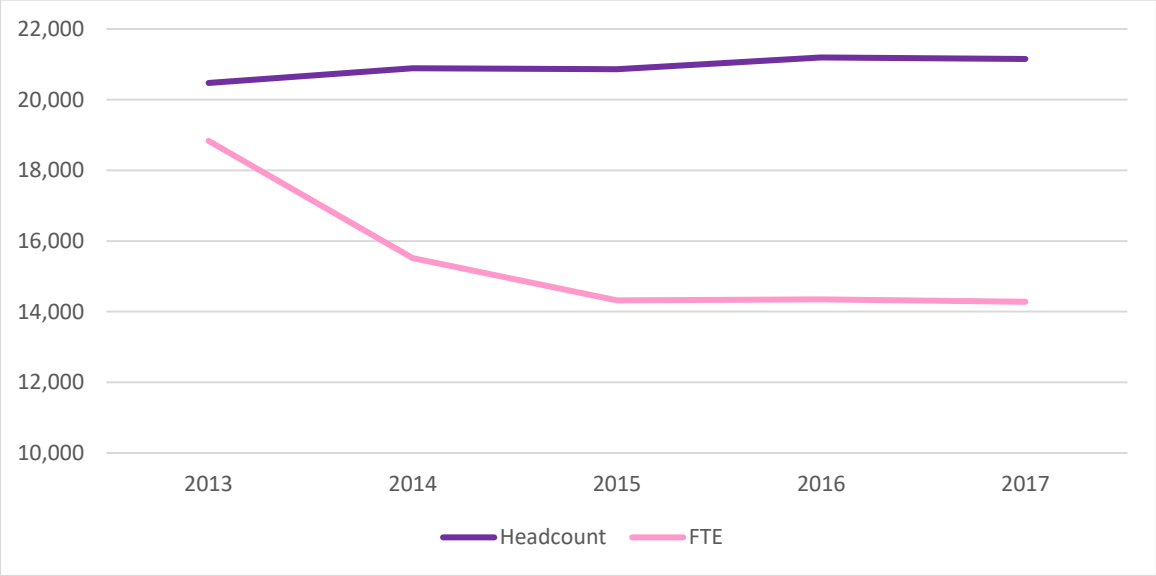
1. Only those who are registered are included;
2. Then, those who are registered as an EN only or an RN only are excluded;

3. Then, only those who are employed (including on leave for less than three months) are selected (see question 5 in Appendix A);
4. Then, those who reported any principal area of their main job in midwifery OR the principal area of their main job in nursing was 'maternity care' (see question 13 in Appendix A) are included;
5. Then, only those who stated that their principal role of their main job in nursing and/or midwifery was 'clinician' are included (see questions 12 and 15 in Appendix A) (this provides the midwifery supply headcount);
6. Then, only the following are included (this provides the midwifery supply FTE):
    - all midwifery hours for those identified as working as a midwife.
    - nursing hours only for midwives that indicated they were working in maternity care.

    (note that those who are registered as an RN only and work in maternity care are not included in the midwifery supply). The result is a total midwifery supply of **21,149** (headcount) and **14,280** FTE.

The same method can be applied to historical data; Figure 2 shows the trends in midwifery supply over the last five years.

Figure 2: Midwifery supply headcount and FTE, 2013 – 2017

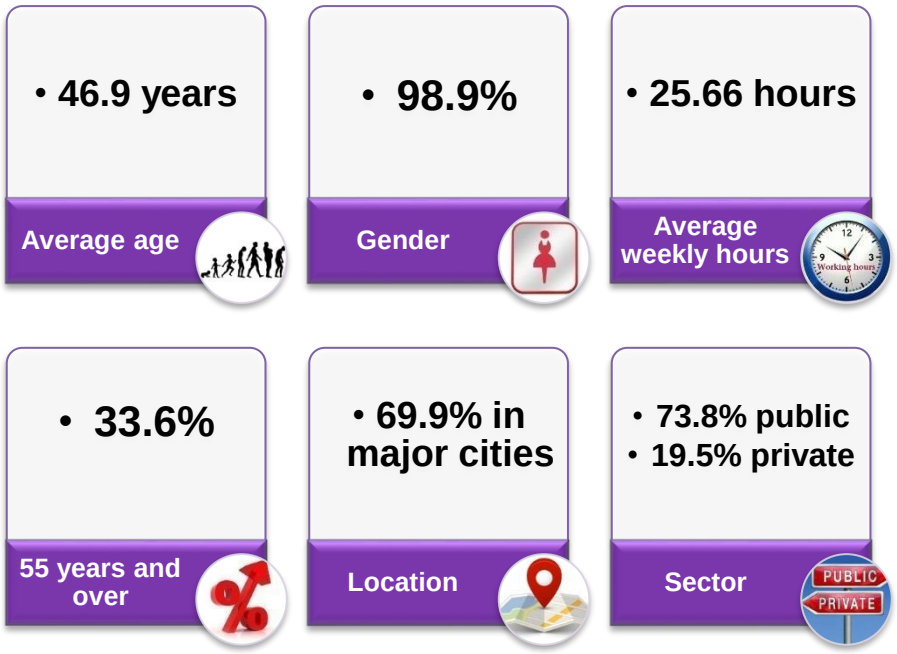


Source: NHWDS, Nursing and Midwifery (2013-2017)

Current demographics

According to the 2017 NHWDS, there were 21,149 midwives who indicated they were employed and working as a midwife with the following characteristics:

Figure 3: Demographics of the midwifery (supply) Workforce 2017



Source: NHWDS, Nursing and Midwifery 2017

Role in midwifery

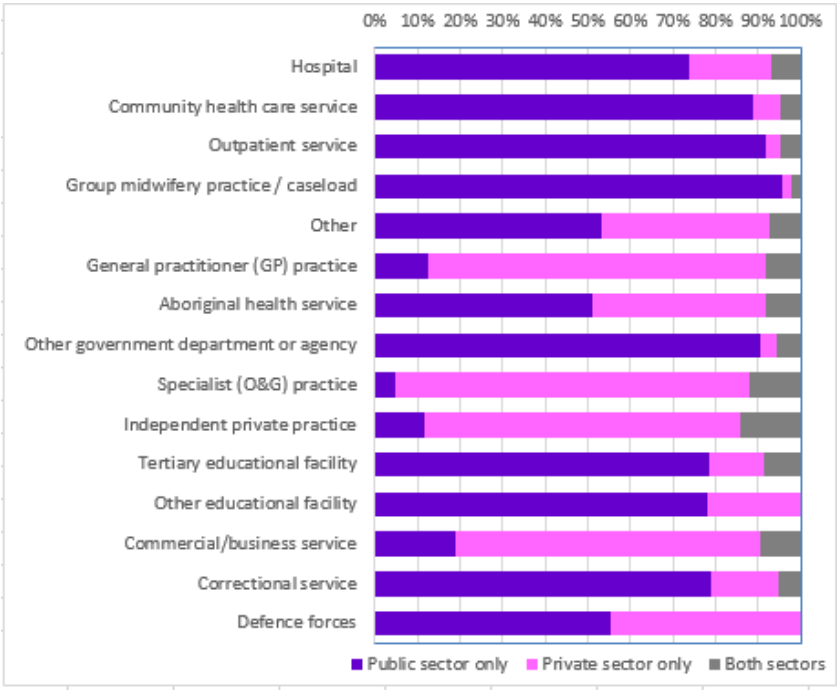
Figure 4: Role in Midwifery

Division	Principle area of main job	Number	Percent female (%)	Average age	55 years and over (%)	Average weekly hours
Employed Midwife	Antenatal care	2,290	98.2%	49.2	39.1%	21.54
	Care during labour and birth	3,584	99.1%	42.8	22.6%	30.51
	Antenatal, Intra-partum and Post-partum care	6,196	98.9%	44.7	27.0%	29.59
	Midwifery education	245	97.6%	48.4	31.0%	23.70
	Midwifery management	563	98.6%	51.0	40.3%	30.04
	Neonatal care	1,347	98.5%	50.5	43.7%	19.88
	Postnatal care	5,806	99.4%	48.3	38.9%	22.66
	Midwifery research	14	92.9%	53.1	71.4%	29.21
	Policy	16	100.0%	51.6	43.8%	14.94
	Other	1,088	97.6%	53.1	51.8%	17.39
Total		**21,149**	**98.9%**	**46.9**	**33.6%**	**25.66**

Source: NHWDS, Nursing and Midwifery 2017

Work setting

Figure 5: Work Setting



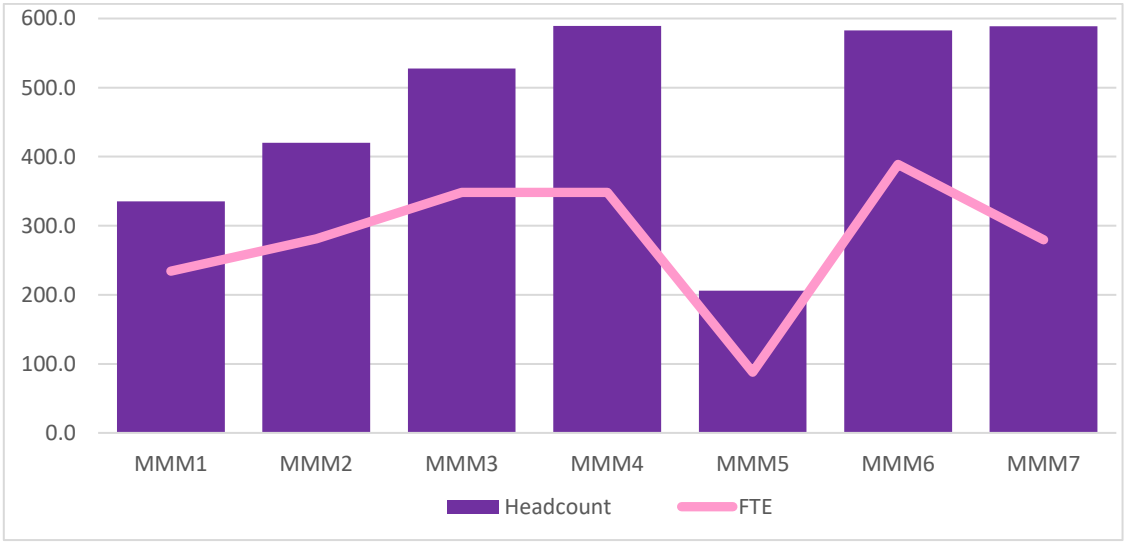
Source: NHWDS, Nursing and Midwifery 2017

Distribution

Figure 6 indicates that midwives are relatively well distributed across Australia. Albeit lower in more remote areas, it shows that the midwifery headcount supply per 100,000 population increase in more remote areas.

Based on the midwives per 100,000 population it shows reasonable distribution (ranging from 11 to 18 percent); with the exception of Modified Monash (MM) 5 (seven per cent). This is largely to do with the population within MM5 rather than the distribution of midwives, that is, there are no population centres in these locations large enough to support a public or private hospital. The vast majority of midwives are located within MM1 (70 percent) followed by 10 percent in MM2 and 8 percent in MM3 and all other MM areas are 5 percent or less.

Figure 6: Midwifery supply (headcount and FTE) per 100,000 females aged 15 - 49 years by MM



Source: NHWDS, Nursing and Midwifery 2017

The Modified Monash Model (MMM) is a classification system that categorises metropolitan, regional, rural and remote areas according to both geographical remoteness and town size.

Figure 7: Definitions of the Modified Monash Model Categories

MMM Category	Definition
1	All areas categorised ASGS-RA1.
2	Areas categorised ASGS-RA 2 and ASGS-RA 3 that are in, or within 20km road distance, of a town with population >50,000.
3	Areas categorised ASGS-RA 2 and ASGS-RA 3 that are not in MM 2 and are in, or within 15km road distance, of a town with population between 15,000 and 50,000.
4	Areas categorised ASGS-RA 2 and ASGS-RA 3 that are not in MM 2 or MM 3, and are in, or within 10km road distance, of a town with population between 5,000 and 15,000.
5	All other areas in ASGS-RA 2 and 3.
6	All areas categorised ASGS-RA 4 that are not on a populated island that is separated from the mainland in the ABS geography and is more than 5km offshore.
7	All other areas – that being ASGS-RA 5 and areas on a populated island that is separated from the mainland in the ABS geography and is more than 5km offshore.

Source: www.doctorconnect.gov.au

Hours worked

Figure 8: Midwifery (supply) average hours, 2013 - 2017

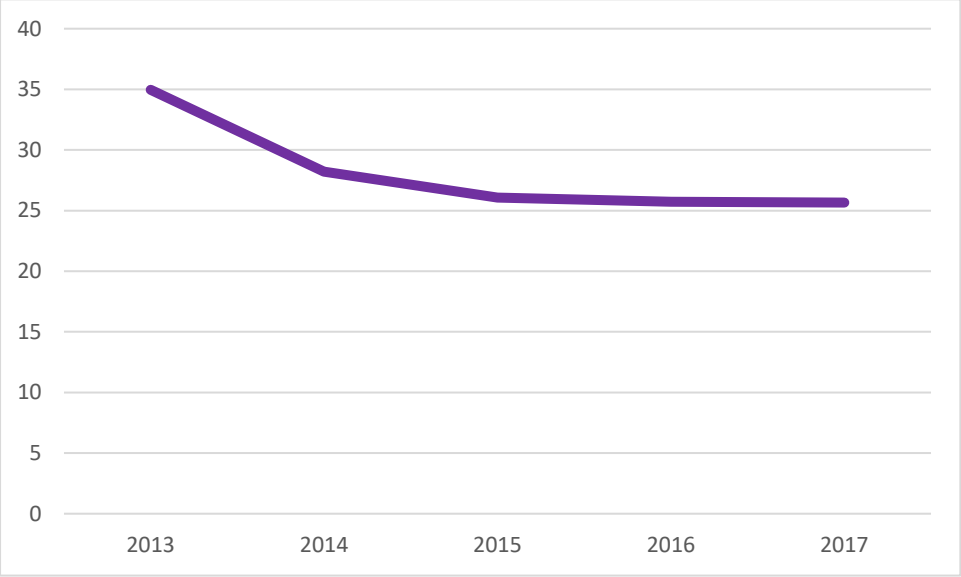


Figure 9: Midwifery (supply) average hours by state, 2017

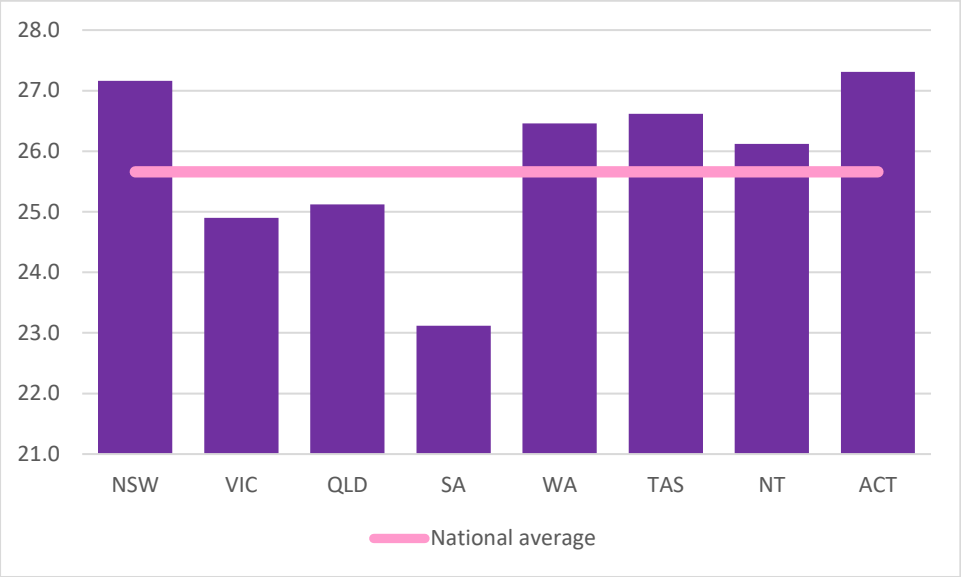
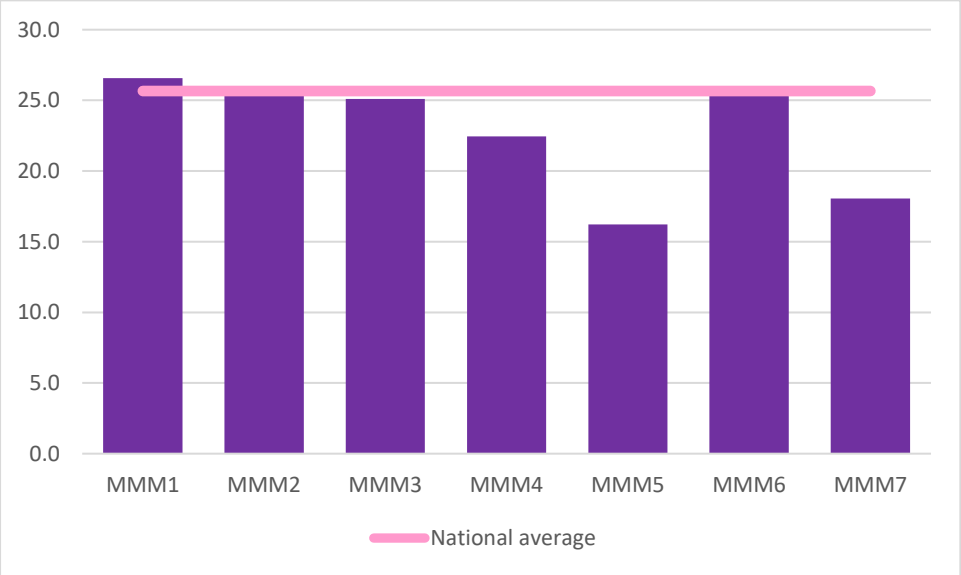


Figure 10: Midwifery (supply) average hours by MMM, 2017

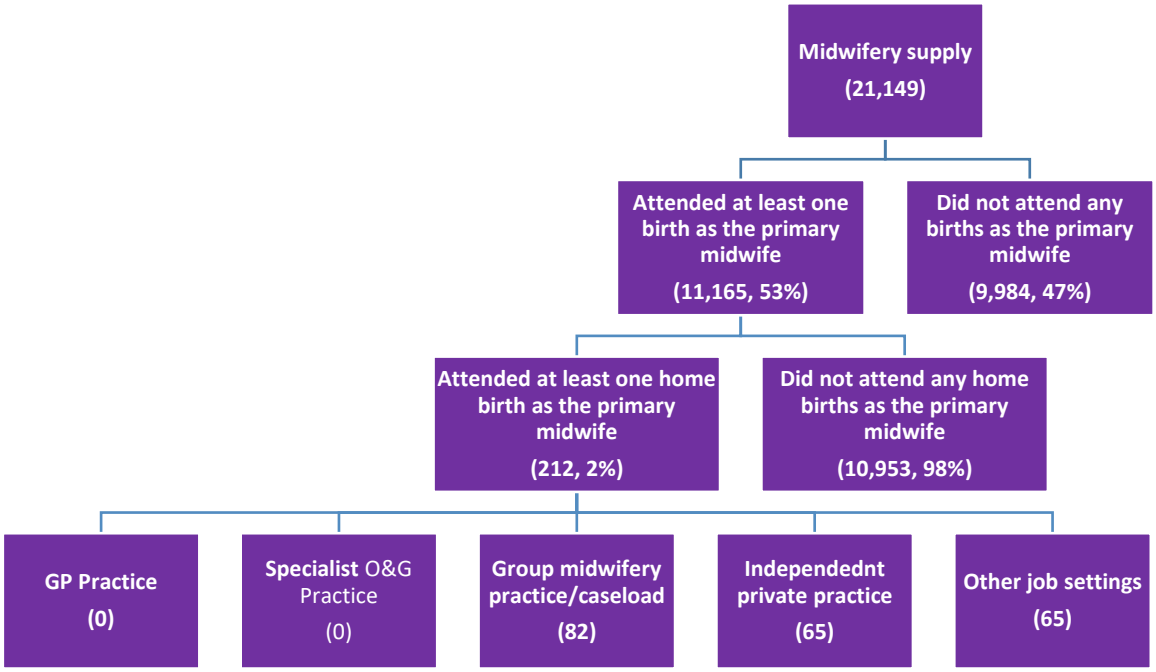


Midwives who attended a home birth as the primary midwife

The vast majority (97 per cent) of women birth in a hospital setting, 2 per cent in a birthing centre and 0.4 per cent at home. The NMBA Safety and Quality guidelines for privately practising midwives require there should be two registered health professionals, educated to provide maternal and newborn care and skilled and current in maternity emergency management and maternal/neonatal resuscitation. [2]

[2] https://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/Codes-Guidelines.aspx

Figure 11: Attendance at birth as the primary midwife



Source: NHWDS, Nursing and Midwifery 2017

Education

In Australia, midwifery education is delivered via various programs. A brief summary of each is as follows:

Bachelor of Midwifery

The Bachelor of Midwifery is a three year undergraduate degree. Once a student has completed their degree, they are eligible for registration with the NMBA as a Registered Midwife and are able to work in a range of settings.

Bachelors of Nursing and Midwifery

Also known as a dual degree, the combined Bachelor of Nursing/Bachelor of Midwifery course takes approximately four years full-time study and provides graduates with qualifications that allow them to apply for registration with the NMBA as a Registered Nurse and a Registered Midwife.

Graduate Diploma of Midwifery

Eligibility for registration as a Midwife is also possible through completion of a Bachelor of Nursing and then completion of a Graduate Diploma of Midwifery. A Bachelor of Nursing generally takes three years and a Graduate Diploma of Midwifery is about 12-18 months in length, depending on whether it is undertaken full-time or part-time.

Master of Midwifery

Some but not all Master of Midwifery courses also lead to eligibility for registration.

Endorsed Midwife

Midwives can seek to obtain an additional endorsement on their registration which allows them to prescribe certain medications. The NMBA has developed the *Registration standard:*

Endorsement for scheduled medicines for midwives.[3] This standard governs the endorsement of midwives for scheduled medicines. Endorsed Midwives are able to apply to Medicare for a Medicare provider number and/or a Pharmaceutical Benefits Scheme (PBS) provider number. This allows the Endorsed Midwife to provide services that are eligible for a Medicare rebate and enables them to become authorised PBS prescribers.

To obtain the endorsement, eligible midwives must successfully complete an NMBA approved program of study that leads to an endorsement for scheduled medicines or a substantially equivalent program as determined by the NMBA. Further requirements include:

- Current general registration as a midwife in Australia without conditions or unsatisfactory performance; and
- Completion of the equivalent of three years full time clinical practice (i.e. 5000 hours) within the past six years across the full continuity of midwifery care or within a specified context of practice. Recognised contexts of practice include antenatal, postnatal and ante and postnatal combined.

Entry Programs for Internationally Qualified (EPIQ) Midwives

EPIQ (midwifery) programs of study are bridging courses for internationally qualified midwives who are required by the NMBA to undertake a bridging program and assessment in accordance with section 53(c) of the *Health Practitioner Regulation National Law Act 2009*. NMBA approved EPIQ programs are a pathway for internationally qualified midwives to obtain a sufficient level of practice according to the Australian standards for practice. There have been no Australian Nursing and Midwifery Accreditation Council (ANMAC) accredited EPIQ (Midwifery) programs for midwives since 2015.

Return to Practice

Return to practice programs are for Australian trained or qualified midwives who are currently not registered and wish to regain their registration with NMBA. There have been no ANMAC accredited return to practice programs for midwives since 2015.

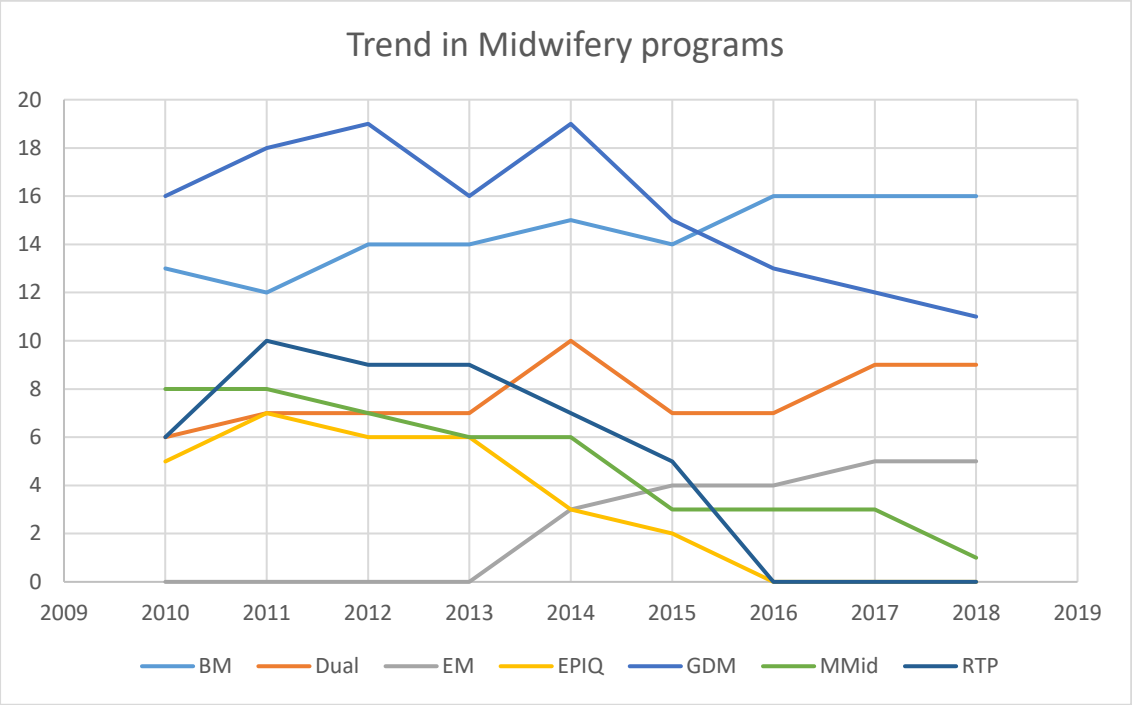
Midwifery Programs and Recent Trends

ANMAC is the independent education accrediting authority for nursing and midwifery under the National Registration and Accreditation Scheme. It is primarily responsible for maintaining the quality standards of nursing and midwifery education and assessment. ANMAC is also the authority responsible for the accredited education of midwives who migrate to Australia under the Commonwealth's General Skilled Migration program. Since 2010, ANMAC has monitored and/or accredited 123 midwifery programs.

Figure 12 shows recent trends in the number of midwifery programs that were accredited by ANMAC from 2010 to 2018. Since 2010, Bachelor of Midwifery course accreditations have grown slightly from 13 to 16. The Graduate Diploma of Midwifery has seen a steady decline in accreditations from 19 in 2014 to 11 in 2018. Since the Endorsed Midwife programs were introduced in 2013, there has been gradual growth in accreditation to the current number of five NMBA approved programs. As of 2018, the NMBA reports that 310 student places for Endorsed Midwives were approved.

[3] https://www.nursingmidwiferyboard.gov.au/Registration-and-Endorsement/Endorsements-Notations.aspx#eligible

Figure 12: Trends in accredited Midwifery Programs



Key – BM (Bachelor of Midwifery), Dual (Bachelors of Nursing and Midwifery), EM (Endorsed Midwife), EPIQ (Entry Programs for Internationally Qualified Midwives), GDM (Graduate Diploma of Midwifery), MMid (Master of Midwifery), RTP (Return to Practice)

Source: Australian Nursing and Midwifery Accreditation Council

Models of Care

The Australian Institute of Health and Welfare (AIHW) and the National Perinatal Epidemiology and Statistics Unit, have developed standardised definitions for models of maternity care, which are recognised as the Maternity Care Classification System (MaCCS):

Figure 13: Models of care in the Maternity Care Classification System (MaCCS)

Model of Care	Description	Antenatal Care	Intrapartum Care	Postnatal Care
Midwifery group practise caseload care	Care at all stages is given by a primary midwife with a secondary midwife in support. Assistance from doctors as required.	Hospital, community or home	Hospital, birth centre or home	Hospital, community or home
Team midwifery care	Care at all stages is provided by a team of rostered midwives with the assistance of doctors as needed.	Usually home or community	Usually a hospital or birth centre	Home or community
Private midwifery care	Care provided by a private midwife or midwife team with the assistance of doctors as needed.	Home or community	Hospital, home or birth centre	Home or community
Shared care	A community provider such as a doctor or midwife works with hospital staff under an agreement.	Community	Hospital	Hospital and/or community
Combined care	Antenatal care is handled by a private doctor or midwife while intrapartum and postnatal care is handled in the public hospital system by public hospital staff.	Community	Hospital	Home or community
Specialist care (obstetrician)	Antenatal care provided by a private obstetrician. Intrapartum care is managed in a private or public hospital by the obstetrician and midwives and postnatal care continues with the midwife.	Community	Hospital	Hospital, home or hotel

Private obstetrician and midwife joint care	Care at all stages is provided by a private obstetrician and midwife in partnership. The midwife leads the postnatal care.	Community	Hospital (public or private)	Hospital, home, hostel or hotel
General practitioner obstetrician care	Antenatal and intrapartum care provided by a GP obstetrician while postnatal care is provided by the GP obstetrician and hospital midwives.	Community	Hospital (public or private)	Hospital, home or community
Public hospital maternity care	All stages of care provided by public hospital midwives and/or doctors.	Outpatient clinics (onsite or outreach)	Hospital	Hospital, home or community
Public hospital high risk maternity care	Antenatal care provided by specialists with assistance from midwives. Intrapartum and postnatal care is provided by hospital doctors and midwives.	Hospital	Hospital	Hospital, home or community
Remote area maternity care	Antenatal and postnatal care is provided by a remote area midwife or nurse. Can be managed by a group of midwives working with nurses or doctors. Intrapartum and postnatal care requires temporary relocation to a regional or metropolitan hospital where care is managed by hospital midwives and doctors.	Telehealth or community (fly-in-fly-out clinicians)	Hospital	Hospital

Workforce projections

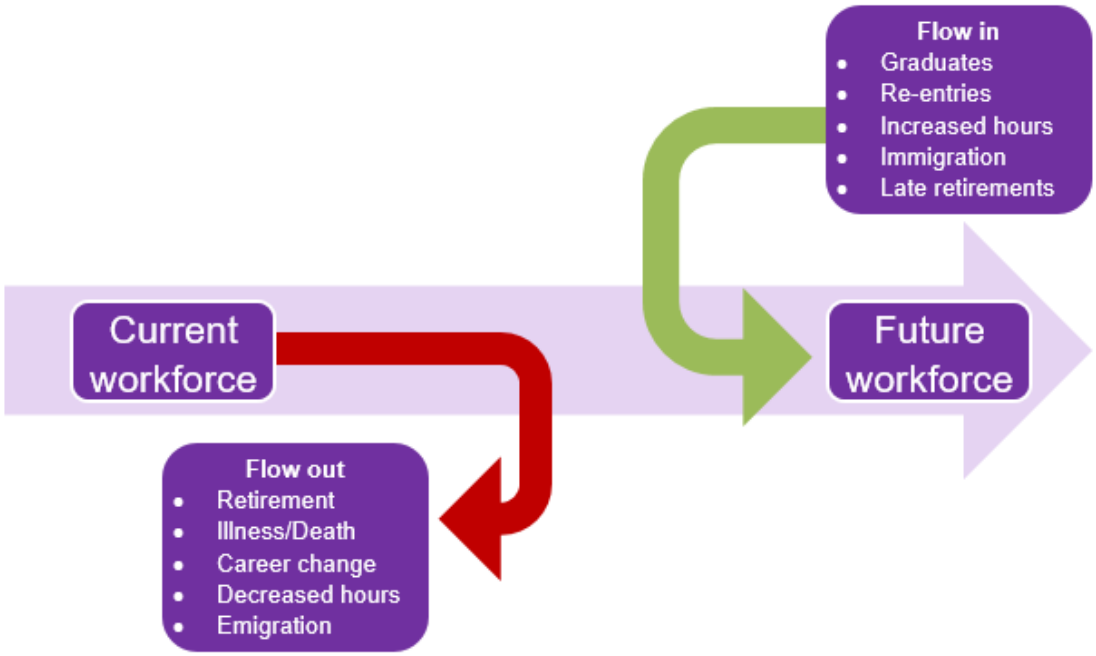
Supply methodology

The principal method used to develop the midwifery workforce projections is mathematical simulation modelling, using the National Health Workforce Planning Tool (NHWPT), often referred to as 'the Tool'. The simulation model employed to generate the workforce supply projections is a dynamic stock and flow model.

A stock and flow model involves identifying the size and activity of the current workforce (stock) and sources of inflows and outflows from the stock (people entering and exiting the workforce), as well as looking at trends or influences on the stock and flows. To project future supply, the initial stock is forecast based on expected inflows and outflows, allowing for the impact of trends and influences in the stock. The workforce is broken down into age and gender cohorts, and different flow rates are calculated by cohort and year for each of the inflow and outflow factors.

The midwifery workforce projections used a dynamic version of the stock and flow approach. This means the stock of the workforce is affected by inflows and outflows to adjacent age cohorts within the stock, as well as external inflows and outflows. That is, each age and gender cohort receives inflows not just from graduates and migration (external flows), but also from people ageing within the model that move from one age cohort into the next. For example, someone moves from the 30 to 34 cohort into the 35 to 39 cohort. Similarly, each age and gender cohort has exits applied – exits as people leave the workforce altogether, and exits as a person moves into the next age cohort. This is an iterative calculation in each year over the projection period, and is a representation of labour force dynamics. This process is represented in Figure 14.

Figure 14: Stock and Flow Process



Key inputs in the stock and flow model

There are four key inputs in the dynamic stock and flow model:

1. Workforce stock
2. New graduates
3. Migration (permanent, no substantive visa held)
4. Exits, which includes all permanent and temporary flows out of the workforce.

Workforce stock

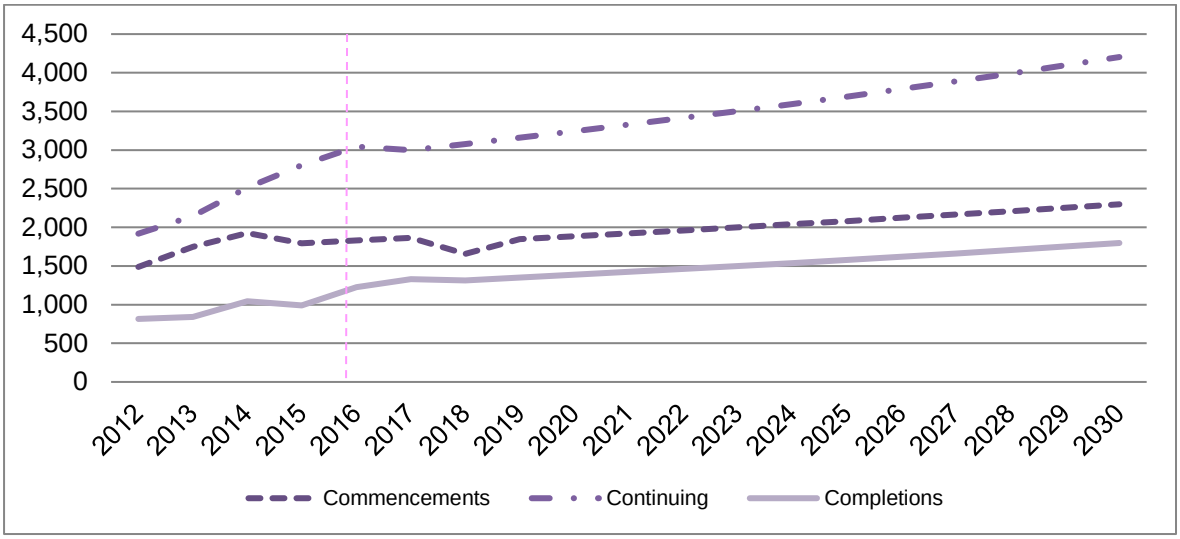
Calculation of the workforce 'stock' in the base year (2017) uses the NHWDS. The NHWDS combines data from the annual registration process through the Australian Health Practitioner Regulation Agency (AHPRA) for registered midwives and nurses, together with data from a workforce survey that is voluntarily completed at the time of registration.

New graduates

Data from the Department of Education was used to estimate the anticipated number of new enrolments (commencements), continuing students and completing graduates, based on recent trends in the number of graduating students and their expected years of completion.

Figure 15 shows the number of commencements, continuing and completing - graduates (historical and projected) for midwives to 2030. From 2017, graduate numbers are projected based on historical growth and the number of students in training.

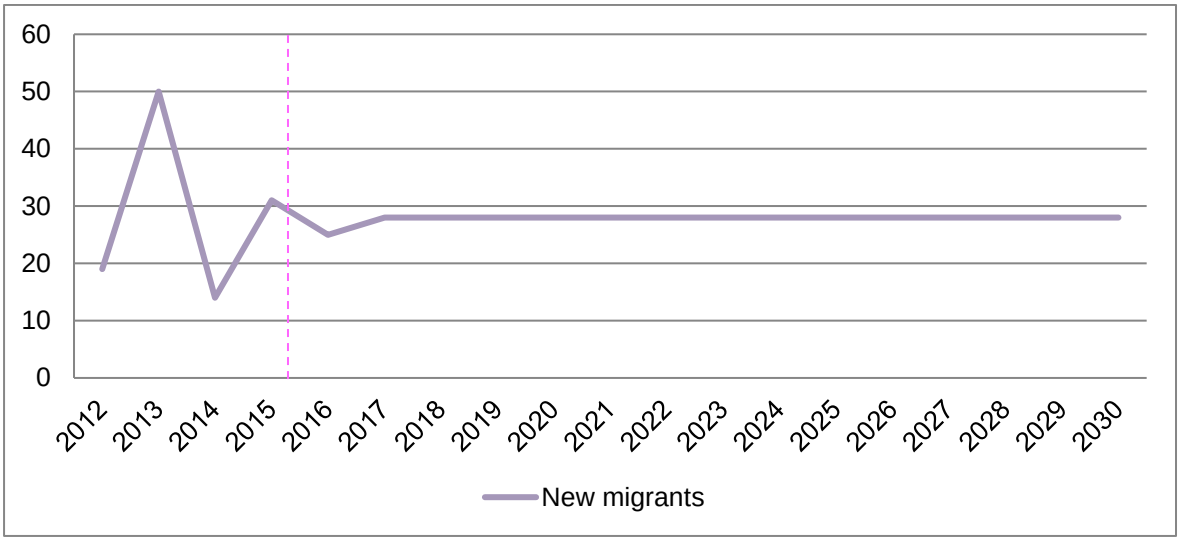
Figure 15: Commencing, continuing and completing midwifery students, 2012 - 2030



Migration

Figure 16 shows the number of permanent migrant midwives that entered the workforce (sourced from the Department of Home Affairs) to estimate migratory inflows. The migration numbers in 2017 is held constant to 2030 in the model. This is based on the average number of migrants that entered in the last five years. To avoid double counting the number of permanent migrants who have held no previous substantive visa are used as the input into the workforce projections.

Figure 16: Permanent migrants, 2012 - 2030



New entrants

The new registrations for midwives are considered over a two year period. This is due to a timing issue where new entrants were registered in particular year, but didn't fill out a survey until the following year as their registration occurred after 31 May of the previous year. Taking into account the two year period (below in figure 17) shows that the number of completions and migrants are closely aligned to the number of new registrants (on average 88 per cent of those completing or entering Australia are registering to practise as a midwife).

Figure 17: New entrants to the workforce model, 2012 - 2030

Year	Completions (graduates)	New entrants (graduates)	New migrants	New entrants (migrants)
2012	*815*	-	*19*	-
2013	*840*	794	*50*	794
2014	*1,045*	945	*14*	945
2015	*990*	911	*31*	911
2016	*1,226*	1,116	*25*	1,116
2017	*1,330*	1,212	*28*	1,212
2018	*1,311*	1,167	*28*	25
2019	*1,352*	1,203	*28*	25
2020	*1,387*	1,234	*28*	25
2021	*1,423*	1,267	*28*	25
2022	*1,461*	1,300	*28*	25
2023	*1,499*	1,334	*28*	25
2024	*1,539*	1,369	*28*	25
2025	*1,579*	1,405	*28*	25
2026	*1,620*	1,442	*28*	25
2027	*1,663*	1,480	*28*	25
2028	*1,707*	1,519	*28*	25
2029	*1,751*	1,559	*28*	25
2030	*1,797*	1,600	*28*	25

Exits

Estimates of exits are based on the number of permanent departures (retirements, resignations, deaths and migration) and semi-permanent departures (absences from the workforce on a medium to long term basis, including leave without pay and maternity leave) from national registrations.

Now that the NHWDS has more data points in the collection, the number of re-registers entering the workforce from previous years can be seen in the data sets. The exit rates are based on the average from 2013 to 2017 that have not re-registered as either a midwife or a nurse in the following year.

Midwifery Training Analysis Pipeline (TAP) methodology

Pipelining provides a projection of the number of students needed to establish a balance between projected supply and demand in a given year. The process moves beyond unrealistic lockstep assumptions about the passage of students through the education system. That is, it does not assume that, for example, a nurse entering a three year education program will complete their training in that timeframe. Instead the methodology uses specialised flow analysis taking into account:

- typical transition rates within course;
- recent changes in student intakes; and
- historical rates of flow through (i.e. known number of beginning students and actual outputs (graduates)).

Figure 18 shows the transition calculations that were used to construct the midwifery training analysis pipeline.

Figure 18: Transition calculations for the training pipeline for graduate midwives

Transition/churn	Rates	Explanation
Commencements	2%	Of previous years
Continuing	3%	Commencing with the average (which closely aligns with the 62% that make up the continuing students)
Continue to Completion	44%	Of continuing students, those that move to completions the following year, based on historical trends
Through rate	**64%**	If everyone full time and complete within prescribed period
Bachelor (3 years)	52%	
Dual (4 years)	63%	
Grad Cert (1 year)	47%	
Grad Dip (1.5 years)	93%	
New migrants	28	Average of those that have no substantive visa between 2012-2017
New registrants	88%	This represents the historical proportion of new registrants entering the workforce

Midwife Training Analysis Pipeline

In constructing the midwifery Training Analysis Pipeline (TAP), the above discussed transition rates are used to estimate the future pipeline. Figure 19 outlines the students commencing, continuing and completing training and projecting the historical trends forward. The basis for conducting the TAP is to establish the inflows in the supply and demand workforce projections.

Figure 19: Midwifery TAP, 2012 - 2030

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Commencements	**1,488**	**1,750**	**1,926**	**1,793**	**1,829**	**1,866**	**1,655**	**1,847**	**1,884**	**1,922**	**1,961**	**2,000**	**2,040**	**2,081**	**2,123**	**2,166**	**2,209**	**2,253**	**2,298**
Bachelor (3 years)	*867*	*955*	*1,035*	*1,002*	*1,024*	*1,044*	*926*	*1,033*	*1,054*	*1,075*	*1,097*	*1,119*	*1,141*	*1,164*	*1,188*	*1,212*	*1,236*	*1,260*	*1,285*
Dual (4 years)	*244*	*457*	*458*	*353*	*366*	*370*	*329*	*367*	*374*	*382*	*389*	*397*	*405*	*413*	*421*	*430*	*439*	*447*	*456*
Grad Cert (1 year)	*127*	*77*	*26*	*16*	*11*	*11*	*10*	*11*	*11*	*12*	*12*	*12*	*12*	*13*	*13*	*13*	*13*	*14*	*14*
Grad Dip (1.5 years)	*250*	*261*	*407*	*422*	*428*	*440*	*391*	*436*	*445*	*454*	*463*	*472*	*482*	*491*	*501*	*511*	*521*	*532*	*542*
Continuing	**1,918**	**2,146**	**2,516**	**2,803**	**3,044**	**3,000**	**3,079**	**3,160**	**3,243**	**3,328**	**3,415**	**3,505**	**3,597**	**3,691**	**3,788**	**3,888**	**3,990**	**4,095**	**4,203**
Completions	**815**	**840**	**1,045**	**990**	**1,226**	**1,330**	**1,311**	**1,352**	**1,387**	**1,423**	**1,461**	**1,499**	**1,539**	**1,579**	**1,620**	**1,663**	**1,707**	**1,751**	**1,797**
Bachelor (3 years)	*348*	*407*	*444*	*457*	*573*	*618*	*609*	*628*	*645*	*662*	*679*	*697*	*715*	*734*	*753*	*773*	*793*	*814*	*835*
Dual (4 years)	*193*	*170*	*193*	*160*	*279*	*264*	*260*	*268*	*275*	*282*	*289*	*297*	*305*	*313*	*321*	*329*	*338*	*347*	*356*
Grad Cert (1 year)	*33*	*119*	*31*	*17*	*8*	*10*	*9*	*10*	*10*	*10*	*11*	*11*	*11*	*11*	*12*	*12*	*12*	*13*	*13*
Grad Dip (1.5 years)	*241*	*144*	*377*	*356*	*366*	*439*	*433*	*446*	*458*	*470*	*482*	*494*	*508*	*521*	*534*	*548*	*563*	*578*	*593*
New migrants	**19**	**50**	**14**	**31**	**25**	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28**	**28**
New entrants (students)	n.a.	**794**	**945**	**911**	**1,116**	**1,212**	**1,167**	**1,203**	**1,234**	**1,267**	**1,300**	**1,334**	**1,369**	**1,405**	**1,442**	**1,480**	**1,519**	**1,559**	**1,600**
New entrants (migrants)	n.a.						**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**

ANMAC figure
Historical education data
Derived

Demand

A key element of this paper is to formulate a method to determine the demand for the midwifery workforce.

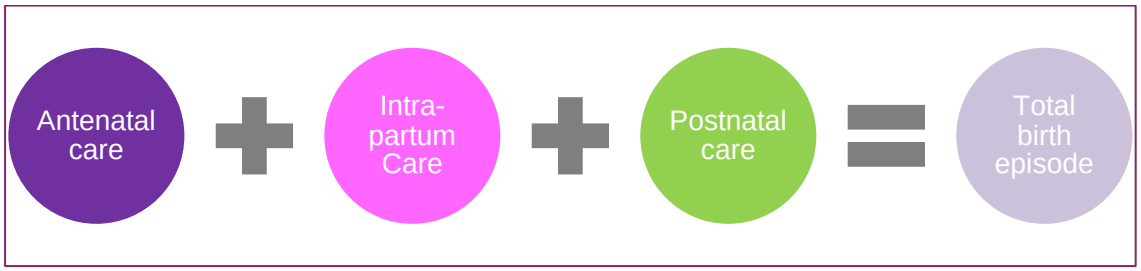
Previous methodology

There were a number of concerns regarding the method in *HW 2025 Volume 1*, which used the number of actual births (separated out for caesarean and vaginal birth) from the Australian Institute for Health and Welfare (AIHW) *Australia's mothers and babies report 2006* to *2008* and forecast demand based upon the population projection of women aged 15-49 years. It is recognised that this method did not factor in the continuity of care for maternity services. In this report the methodology used for estimating demand is continuity of care.

Continuity of care

Figure 20 shows the continuity of care for midwifery which acknowledges that midwives work with women and infants from pregnancy and childbirth through to six weeks postnatal. This care is provided in a variety of public and private settings.

Figure 20: Continuity of Care



Each of the above components are considered separately and projected into the future independently.

While antenatal visits are well established as a means of improving perinatal outcomes, the number and timing of visits has been less studied[4]. Systematic reviews and observational studies tend to show an association between the number of antenatal visits and/or gestational age at first antenatal visit and pregnancy outcomes[5]. However, there are many differences in socio-demographic and risk profiles of women attending antenatal care that may contribute to these findings. The evidence based on *Clinical Practice Guidelines: Pregnancy Care* recommends that the appropriate number of antenatal visits is 10 for the first pregnancy and seven for subsequent (normal pregnancies).

With the limited data available an assumption is made that the number of antenatal visits needed to be translated into a measure of the total recommended number of visits women attended according to pregnancy characteristics.

[4] Antenatal care for uncomplicated pregnancies, Clinical guideline [CG62] Published date: March 2008, Last updated: January 2017

[5] Cochrane Database Syst Rev. 2010 Oct 6;(10), Alternative versus standard packages of antenatal care for low-risk pregnancy, Dowswell et al 2010

Figure 21 shows the 'number of women' who attended antenatal visits as reported in the AHIW *Australia's mothers and babies report*. A measure (mid-point) was devised to determine an approximation of the number of visits a women would have had depending on how many visits they were reported against – this equated to the number of visits. The hours are also an approximation of how long each of these visits would take – to be used as a weighting factor against the total hours of a birth episode.

Figure 21: Determination of antenatal visits measure

Number of visits	Measure	Hours	Number of women*	Number of visits*
1	1	1.5	2,076	2,076
2-5	3	5	9,494	28,482
5+	5	8	212,699	1,063,495

** AIHW, Australia's mothers and babies annual report – in brief, 2014. Perinatal statistics series no. 32 cat no. PER87. Canberra*

There are a number of different models of care available to women which vary both among and within jurisdictions. There may also be variations within the implementation and delivery of each model which take account of a number of factors, such as the available infrastructure, workforce, and geographic distribution of either the woman or care provider. While all these factors are considered, a simple calculation is often used to project the number of births in Australia: that is, using the historical ABS births (2006-2015) by individual ages (15-49 years) against the respective ages of the ABS projected population.

While the length of postnatal stay does not factor in additional visits/contact with mothers and babies post birth, it gives an indication of the additional work that is carried out by a midwife that would not be accounted for after the actual birthing event. It is acknowledged that postnatal care doesn't only take place in a hospital setting. Due to limited information the length of postnatal stay data has been used as a proxy measure to estimate a weighting that can be applied to the continuity of care. Similar assumptions were made in regard to the postnatal length of stay as with antenatal visits. In Figure 22 the measure (mid-point) was used to determine an approximation of the number of days corresponding to the number of women staying in hospital. The hours were also an approximation of the hours attributed to postnatal care – it was held constant at 12 hours as the average length of stay has been three days for a number of years. These hours will also be included in the weighting of a total birth episode.

Figure 22: Postnatal Stay Measure

length of postnatal stay	Measure	Hours	Number of women	Number of days
Less than 1 day	1	4	10,572	11,077
1 day	1	4	43,352	46,044
2 days	2	8	66,868	140,426
3 days	3	12	55,303	187,689
4 days	4	12	48,203	222,632
5 days	5	12	27,456	164,050
6 days	6	12	6,249	46,662
7–13 days	7	12	3,950	35,070
14 or more days	8	12	384	3,648

AIHW, Australia's mothers and babies annual report – in brief, 2014. Perinatal statistics series no. 32 cat no. PER87. Canberra

The result is the addition of each of these components to equate to a total birth episode. A total birth episode equates to total hours. These hours are then assigned to each component and weighted accordingly.

Full continuity of care

All antenatal, intrapartum and postnatal care is provided by midwives working within this care model. This care model may occur in the women's home, birth centre or hospital setting. It was assumed that a normal birth equates to 42 hours per birth episode. This is in line with Birthrate plus ® (which estimates 40 hours) and advice from the Technical Advisory Group (MTAG). Figure 23 shows the discrete weighting variables and assumptions made.

Figure 23: Variables and assumptions used in the demand calculation of the full continuity of care

Data items	Data source	what data was used	Assumption	Calculation
Intra-partum Care	ABS/AIHW	The number of births (by facility type)	The number of births projected out based on the population projections for the females aged 15-49	Based on feedback from the TAG it was advised that a birth episode was usually 42 hours with the breakdown of antenatal accounting for 38%, labour 33% and postnatal 29%. (note this is also reasonably aligned with birthrate plus which estimates 40 hours) Based on these weightings the projections for each of the data items were weighted accordingly. Resulting in 0.54+1.74+0.26 = 2.53%
	ABS	Population projections (series B)		
Antenatal care	NPNDS	Women who gave birth by number of antenatal visits	The number of women that indicated how many visits they attended were translated into the number of visits (i.e. in 2007 there were 4,494 women that had 2-4 antenatal visits resulting in 3x4,494=13,482 visits)	
Postnatal care	NPNDS	Women who gave birth in hospital by length of postnatal stay	The number of women that indicated how many days their postnatal stay was, were translated into the number of days (i.e. in 2007 there were 54,340 women that had a postnatal stay of 2 days resulting in 2x54,340=108,680 days)	

- Antenatal care = 16 hours (38 per cent)
- Intrapartum care = 14 hours (33 per cent)
- Postnatal care = 12 hours (29 per cent)

Based on this weighting methodology the demand rate equated to **2.53** per cent.

In terms of using the above figure in the modelling of the midwifery workforce – this will form the other side of the modelling equation (demand) where it estimates the growth in midwifery will be 2.53 per cent per annum. This will include comparisons to the ABS high and low fertility rates.

Data sources

The main data sources that were considered were:

- The *ABS 3301.0 – Births, Australia* brings together statistics for live births and fertility in Australia. Data refer to births registered during each calendar year, unless otherwise stated. State or territory relates to the state or territory of usual residence, unless otherwise stated.

- The *AIHW Australia's mothers and babies' annual reports* present key statistics and trends on pregnancy and childbirth of mothers, and the characteristics and outcomes of their babies. These reports use the National Perinatal Data Collection (NPDC), which commenced in 1991 and is a collaborative effort by the AIHW and the states and territories. Perinatal data are collected for each birth in each state and territory, and data most commonly entered by midwives. The data are collated by the relevant state or territory health departments and a standard de-identified extract is provided to the AIHW on an annual basis to form the NPDC[6]. There are 29 mandatory data elements for national reporting, which forms the Perinatal National Minimum Data Set, in addition to voluntary data items.
- The *ABS 3222.0 Population projections*, are not predictions or forecasts but are simply illustrations of the growth and change in population which would occur if certain assumptions about future levels of fertility, mortality, internal migration and overseas migration were to prevail over the projection period. The assumptions incorporate recent trends indicative of increasing levels of fertility and net overseas migration for Australia. Series B largely reflects current trends in fertility, life expectancy at birth, net overseas migration and net interstate migration and is used for the basis of all the projections.

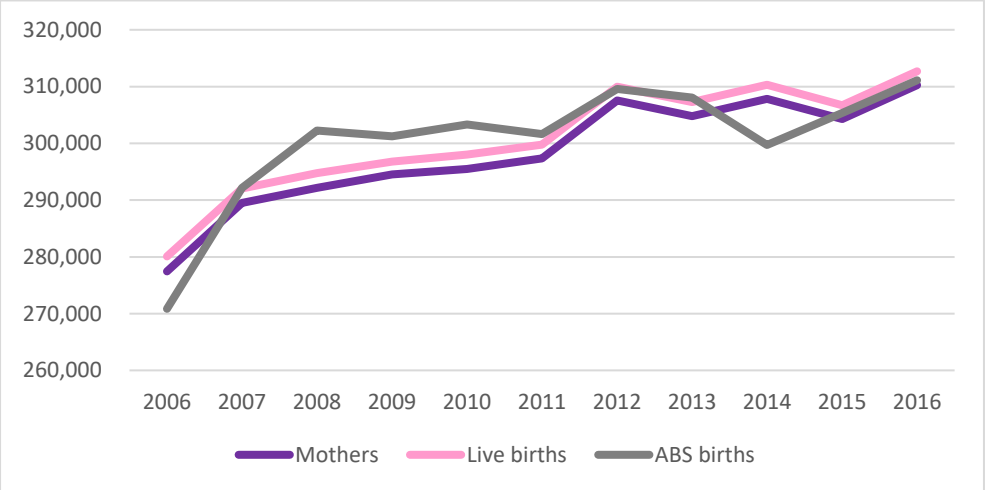
Current utilisation trends

Births

Figure 24 reports the number of actual live births and fertility rate from the ABS. Additional detailed information about each birth is collected by midwives or other birth attendants from clinical and administrative records and information systems from states and territories.

It should be noted that there are differences in the numbers of births reported due to definitional and time-point differences between the two data collections, and the availability/interpretation of data requested from various states and territories (see section 2.2.2 data sources for more information about the data).

Figure 24: Women who gave birth, live births and ABS births, 2006-2016



AIHW National Perinatal Data Collection, 2016 and ABS 3301.0 - Births, Australia, 2017

Figure 25 shows the number of births that occurred in Australia, along with the fertility rate from 2006 to 2017. The average annual growth in the number of births between 2006 and 2017 has been 1.2 per cent. When comparing states and territories; the largest

[6] Australian Institute of Health and Welfare 2015, Australia's mothers and babies 2013—in brief, Perinatal statistics series no. 31. Cat no. PER 72. Canberra: AIHW.

growth occurred in Australian Capital Territory (3.0 per cent) and Victoria (2.1 per cent) while Tasmania saw a decline in the number of births (-1.3 per cent).

Figure 25: Number of Births and Fertility rate, 2006-2017

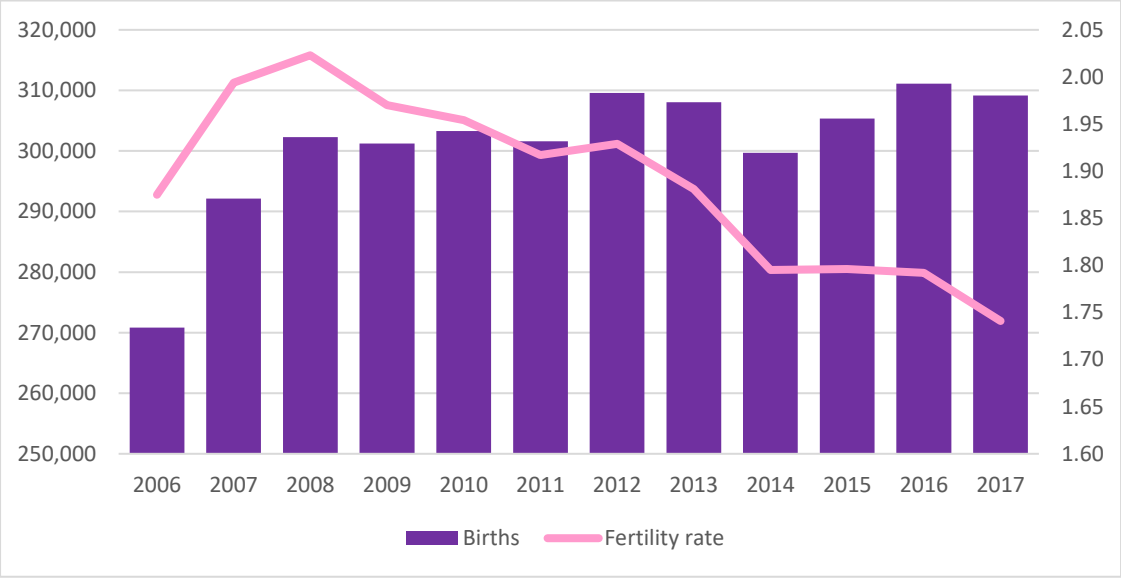


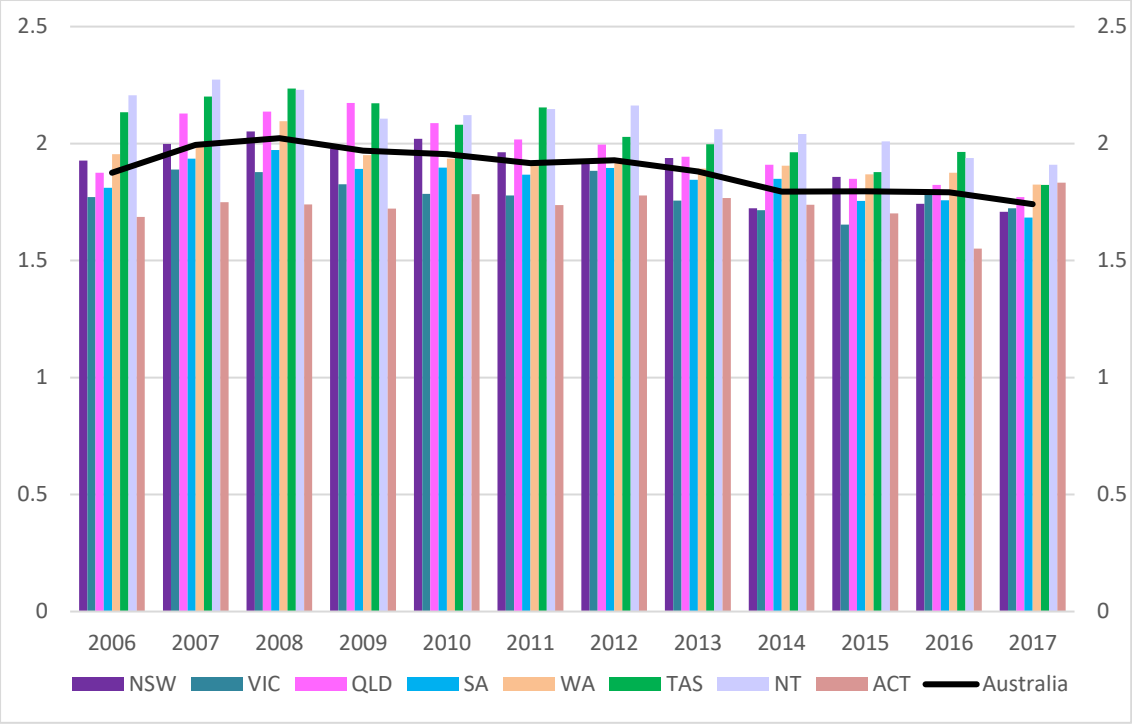
Figure 26: Births by jurisdiction, 2006-2017

Region	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
2006	92,188	65,245	52,695	18,260	27,777	6,475	3,696	4,484
2007	96,351	70,325	61,306	19,666	29,165	6,663	3,896	4,757
2008	100,276	71,184	63,168	20,229	31,851	6,775	3,944	4,808
2009	98,231	70,928	66,149	19,735	30,879	6,627	3,820	4,860
2010	101,266	70,572	64,523	20,078	31,424	6,385	3,899	5,152
2011	99,054	71,444	63,253	19,892	32,259	6,608	3,954	5,121
2012	98,508	77,405	63,837	20,433	33,627	6,168	4,104	5,461
2013	100,462	73,969	63,354	20,090	34,516	6,049	4,053	5,545
2014	91,074	74,224	63,066	20,384	35,403	5,935	4,026	5,552
2015	100,079	73,568	61,745	19,587	35,135	5,680	4,004	5,542
2016	96,083	82,892	61,841	19,772	35,429	5,968	3,927	5,152
2017	96,591	82,094	61,158	19,072	34,498	5,610	3,882	6,207
Growth	*0.43%*	*2.11%*	*1.36%*	*0.40%*	*1.99%*	*-1.30%*	*0.45%*	*3.00%*

ABS 3301.0 - Births, Australia, 2017

The total fertility rate as shown in Figure 27 relates to the average number of children that would be born to a woman over her life time as opposed to the annual number of births per 1,000 population. The data shows relatively stability over the last 10 years – with variation between 2.0 and 1.7. Furthermore, the fertility rate by states and territories (Figure 27) indicates that there are a number of states and territories growing at a higher rate than the national average (Australia), most noticeably in the Northern Territory.

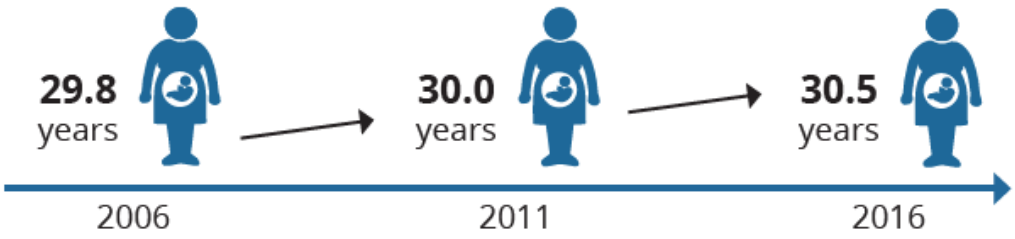
Figure 27: Fertility rates (births per 1,000 population) by state and territory, 2006-2017



ABS 3301.0 - Births, Australia, 2017

The average age of women who gave birth continues to increase at 30.5 years in 2017 compared to 29.8 years in 2006 (Figure 28).

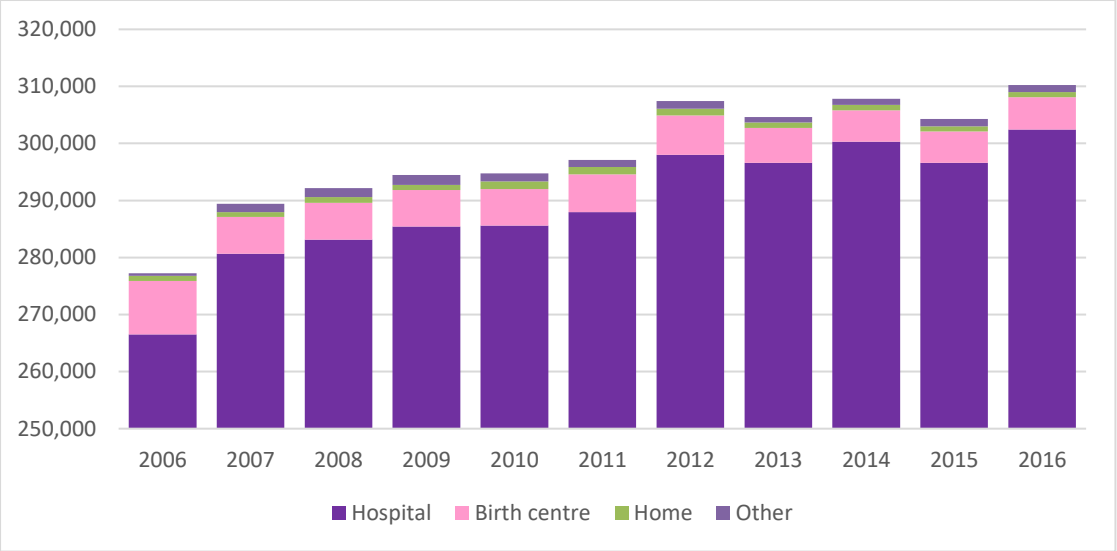
Figure 28: Average age of women, 2006 to 2016



AIHW, Australia's mothers and babies annual report – in brief, 2016. Perinatal statistics series no. 34 cat no. PER97. Canberra

Figure 29 shows of the women who gave birth, the vast majority gave birth in a hospital setting (97 per cent) followed by 2 per cent of women that gave birth at a birthing centre and 0.3 per cent who gave birth at home.

Figure 29: Women who gave birth, by location of birth

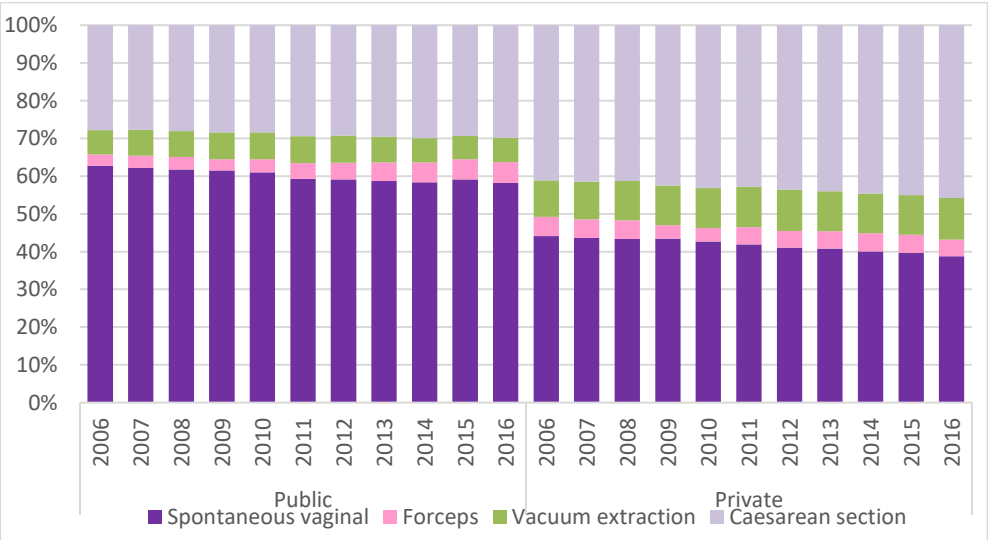


AIHW, Australia's mothers and babies annual report – in brief, 2016. Perinatal statistics series no. 34 cat no. PER97. Canberra

The number of births can be further disaggregated into the different methods of birth.

Figure 30 shows the number of births within hospital settings; where on average 71 per cent of births occurred in a public hospital. The vast majority of public hospital births were spontaneous vaginal births (almost 60 per cent) followed by caesarean sections (29 per cent) and forceps and vacuum extraction accounted for 11 per cent of all public hospital births. The private hospital births accounted for 29 per cent of all births, and within this setting there was an almost even split between spontaneous vaginal births and caesarean sections with 42 and 43 per cent respectively. The number of caesarean sections has grown more in the public sector in the last eight years at 2.8 per cent compared to 1.3 per cent in the private sector. Overall the percentage of caesarean sections account for 34 per cent of all births in 2014 compared to 32 per cent in 2006.

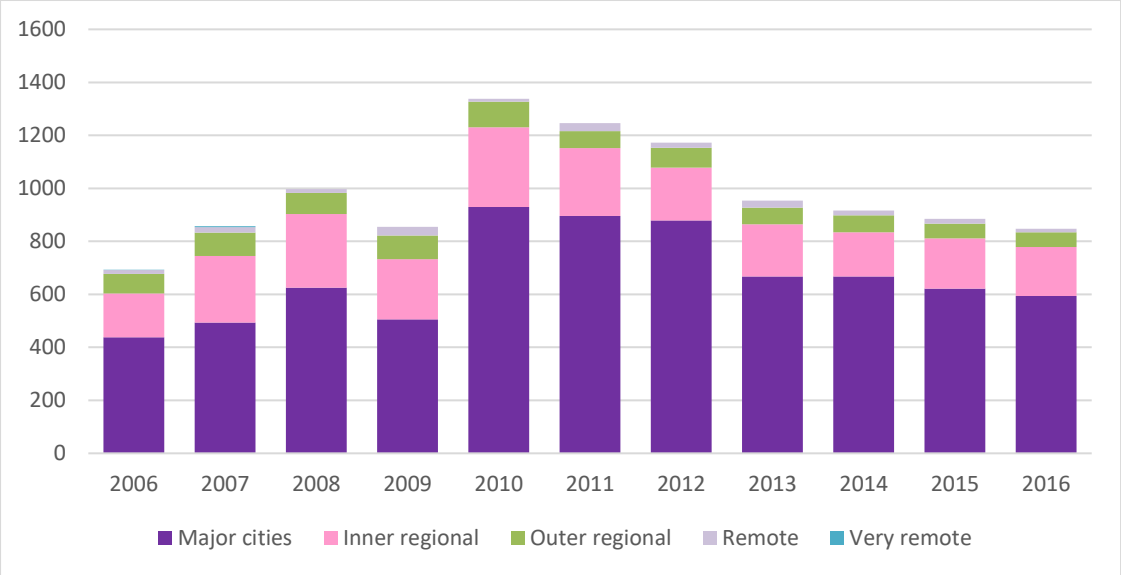
Figure 30: Women who gave birth in hospital by method of birth, hospital sector



AIHW, Australia's mothers and babies annual report – in brief, 2016. Perinatal statistics series no. 34 cat no. PER97. Canberra

Since 2006 there has been over 700 home births each year. Proportionally this only equates to 0.3 per cent of the total number of births. Home births mostly occur in major cities and rarely in very remote areas (Figure31).

Figure 31: Women who gave birth at home by location



AIHW, Australia's mothers and babies annual report – in brief, 2016. Perinatal statistics series no. 34 cat no. PER97. Canberra

Antenatal attendances

Antenatal care is a critical opportunity for health providers to deliver care, support and information to pregnant women. This includes:

- promoting a healthy lifestyle;
- promoting good nutrition;
- detecting and preventing diseases;
- providing family planning counselling; and
- supporting women who may be experiencing intimate partner violence.

As indicated in the AIHW *Australia's mothers and babies annual report –in brief, 2016,* antenatal care is associated with positive maternal and child health outcomes – the likelihood of receiving effective health intervention is increased through antenatal visits. The World Health Organization (WHO) recommends that women receive antenatal care at least four times during pregnancy. The *Clinical Practice Guidelines: Pregnancy Care* recommend that the first antenatal visit occurs within the first 10 weeks of pregnancy and that first-time mothers with uncomplicated pregnancy attend 10 visits (seven visits for subsequent uncomplicated pregnancies)[7].

Data from the AIHW NPDC shows that on average, between 2007 and 2014, 97 per cent of women attended at least one antenatal visit during pregnancy. Most women (91.5 per cent) attended five or more visits with only 0.8 per cent attending one visit only. In 2014, 62 per cent of women were within their first trimester at their first antenatal visit.

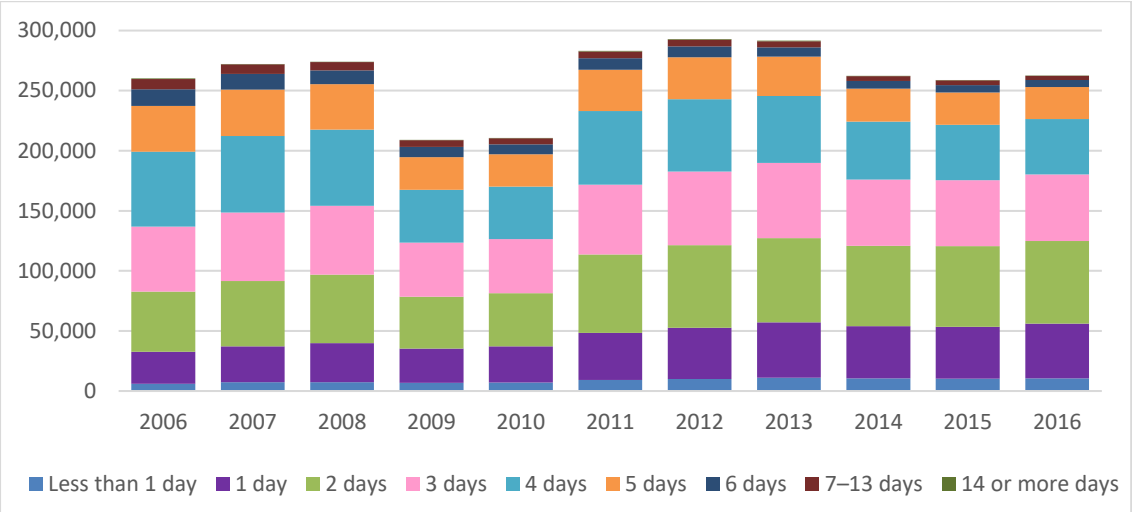
[7] Department of Health (2018) *Clinical Practice Guidelines: Pregnancy Care*. Canberra: Australian Government Department of Health.

Postnatal

The World Health Organization notes that the period soon after childbirth poses substantial health risks for both the mother and the newborn infant. Yet the postnatal period receives less attention from health care providers than pregnancy and childbirth. Models of postnatal care have changed little since first developed a century ago.

Postnatal care aims to maintain and promote the health of the mother and baby, and to foster an environment that offers help and support to the extended family and community for a wide range of related health and social needs. These needs can involve physical and mental health as well as social and cultural issues that can affect health and wellbeing[8]. The NPDC indicates the mean length of postnatal hospital stay was three days for all types of birth between 2006 and 2017 (Figure 32).

Figure 32: Women who gave birth in hospital by length of postnatal stay



AIHW, Australia's mothers and babies annual report – in brief, 2016. Perinatal statistics series no. 34 cat no. PER97. Canberra
Not stated is not included.

[8] Mathai Matthews, von Xylander Severin and Zupan Jelka based on the WHO Technical consultation on postpartum and postnatal care held in Geneva, October 29-31, 2008

Scenarios

Scenario modelling is used to demonstrate the impact of potential policy options on future workforce supply and demand. The method uses a baseline scenario, where current trends are assumed to continue into the future, and this is compared to a range of alternative scenarios.

In this report the baseline scenario is called the continuity of care (baseline) scenario. The alternative scenarios are generated by altering input parameters in the model. The impact of these scenarios is measured by comparing their workforce projection results with the continuity of care (baseline) scenario.

It is important to note that both the baseline and alternative scenarios are not predictions of what will happen in the future over the period to 2030. The baseline should be interpreted as a 'do nothing' scenario, which assumes known policy settings are held constant, and the alternative scenarios provide an estimate of a likely outcome given the set of conditions upon which it is based.

Two alternative scenarios were developed for this midwifery analysis. They were based on considerations of workforce implications and potential policy options that could be considered by Government, industry and education sectors. The scenarios modelled were selected to reflect factors identified during consultation with the MTAG, and they represent potential policy alternatives to influence the future midwifery workforce.

Continuity of care (baseline) scenario

The continuity of care (baseline) scenario - the 'do nothing' scenario for the midwifery workforce - assumes known policy settings are held constant as their future levels cannot be predicted. This allows an assessment of the effects of other changes, which may impact the workforce. This scenario uses the continuity of care demand rate, at 2.53% in 2017.

Population growth

This scenario models the impact of growth in demand matching population growth of females aged 15-49 years, at 1.6 per cent for 2017[9]. This scenario is a lower demand rate than the continuity of care (baseline) scenario.

Increased hours worked

The midwifery workforce reports low hours worked within midwifery; these hours were 25.7 hours per week in 2017, however one FTE is 38 hours per week. In the modelling the hours worked is one of the most sensitive variables. The impact of low hours worked, essentially means that for every position (FTE), close to two midwives (in terms of headcount) is required to fill a position.

This scenario attempts to increase the hours of midwives to 30 hours per week (an increase of 4.5 hours per week or an approximate additional early or late shift per fortnight[10]). This scenario is a response to the recency of practice registration standard, where increasing the hours of a midwife will ensure midwives are maintaining their recency of practice within the midwifery sphere and not moving into nursing only. This scenario uses the continuity of care demand rate, at 2.53% in 2017.

[9] Australian Demographic Statistics, September quarter 2017

[10] Early shift tends to be 7am – 2.30pm (some end at 3pm)
Late shift tends to be 2pm – 9.30pm (some start 1.30pm or finish 10pm)
Night shift tends to be 9pm – 7.30am (some start at 9.10pm or 9.30pm)

Results

The impact of these scenarios is measured by comparing their workforce projection results with the continuity of care (baseline) scenario – a technical construct where current trends are assumed to continue into the future. This allows an assessment of the effects of other changes, which may impact the workforce.

Figure 33 provides a summary of the scenario modelling results. The intention of the scenarios presented is to illustrate workforce policy alternatives and their effects. It is recognised that the scenarios presented are not directly representative of real life policies.

The continuity of care (baseline) scenario assumes that nothing changes and trends continue as they are: it shows the supply of midwives is projected to be in balance with demand in 2030. As previously indicated the hours worked is a sensitive variable in the model given that the model converts the headcount to FTE, as such, in the scenario where hours are increased this significantly impacts the outcomes of the results.

All scenarios present a change in either the hours of the midwives or the demand for midwives. No change in the number of midwives has been modelled. Therefore the demand headcount appears to change for each scenario but the supply headcount remains the same. Figure 33 summarises the scenarios compared to continuity of care (baseline) scenario.

Figure 33: Scenario Summary

Year	2021			2030		
Scenario's	**Supply**	**Demand**	**Balance**	**Supply**	**Demand**	**Balance**
1. CoC (Baseline)	23,206	23,072	134	28,205	27,385	820
2. Population growth	23,206	22,317	889	28,205	24,967	3,238
3. Increased hours worked	23,206	20,012	3194	28,205	23,830	4,376

Figures 34, 35 and 36 present the detailed results of the midwifery workforce planning scenario projections. In each table, the scenario provides the supply and demand for the midwifery workforce across a number of years.

Continuity of care (baseline) scenario - Results

Over the projection period the midwifery workforce is in balance (±3 per cent) across all the years in the table below.

In this scenario, the supply headcount for midwives increases based on the inflows and exits from the workforce (new graduates, migration, exits). This is converted to a supply FTE based on the average hours worked (25.66 hours in 2017 up to 26.25 hours by 2030).

The demand FTE for midwives increases based on the continuity of care demand. The demand FTE is converted to a demand headcount based on the average hours worked (25.66 hours in 2017 up to 26.25 hours by 2030).

Figure 34: Scenario 1 – Continuity of Care (Baseline)

Headcount	2017	2019	2021	2026	2030
Supply	**21,149**	**22,232**	**23,206**	**25,741**	**28,205**
Supply (FTE)	**14,280**	**15,071**	**15,799**	**17,692**	**19,488**
Graduates	*1,212*	*1,203*	*1,267*	*1,442*	*1,600*
Migrants	*25*	*25*	*25*	*25*	*25*
Exits (% of supply)	*3.07%*	*3.32%*	*3.47%*	*3.51%*	*3.24%*
Demand	**21,149**	**22,119**	**23,072**	**25,451**	**27,385**
Demand (FTE)	**14,280**	**14,994**	**15,708**	**17,493**	**18,921**
Excess/Shortfall	**0**	**113**	**134**	**290**	**820**
Excess/Shortfall (FTE)	**0**	**77**	**91**	**199**	**567**

Legend:

No perceived shortage	In balance (± 3 per cent)	Only a slight perceived shortage	Perceived shortage

Population growth

A lower demand rate of 0.9 per cent than the continuity of care (baseline) scenario resulted in an oversupply throughout the projection period of 12 per cent in 2030.

In this scenario, the supply headcount for midwives increases based on the inflows and exits from the workforce (new graduates, migration, exits). This is converted to a supply FTE based on the average hours worked (25.66 hours in 2017 up to 26.25 hours by 2030).

The demand FTE for midwives increases based on the growth in the female aged 15-49 years old population. The demand FTE is converted to a demand headcount based on the average hours worked (25.66 hours in 2017 up to 26.25 hours by 2030).

Figure 35: Scenario 2 - Population growth

Headcount	2017	2019	2021	2026	2030
Supply	**21,149**	**22,232**	**23,206**	**25,741**	**28,205**
Supply (FTE)	**14,280**	**15,071**	**15,799**	**17,692**	**19,488**
Graduates	*1,212*	*1,203*	*1,267*	*1,442*	*1,600*
Migrants	*25*	*25*	*25*	*25*	*25*
Exits (% of supply)	*3.07%*	*3.32%*	*3.47%*	*3.51%*	*3.24%*
Demand	**21,149**	**21,739**	**22,317**	**23,768**	**24,967**
Demand (FTE)	**14,280**	**14,737**	**15,194**	**16,336**	**17,250**
Excess/Shortfall	**0**	**492**	**889**	**1,973**	**3,238**
Excess/Shortfall (FTE)	0	**334**	**605**	**1,356**	**2,237**

Legend:

No perceived shortage	In balance (± 3 per cent)	Only a slight perceived shortage	Perceived shortage

Increased hours worked

This scenario increases all midwives hours by an additional 4.5 hours in an attempt to ensure the dual qualified nurses and midwives are maintaining their recency of practice in midwifery. This scenario results in an excess by 2030 of 16 per cent.

In this scenario, the supply headcount for midwives increases based on the inflows and exits from the workforce (new graduates, migration, exits). This is converted to a supply FTE based on the average hours worked PLUS an additional 4.5 hours by 2030 (25.66 hours in 2017 up to 30.17 hours by 2030).

The demand FTE for midwives increases based on the continuity of care demand. The demand FTE is converted to a demand headcount based on the average hours worked

including the additional 4.5 hours by 2030 (25.66 hours in 2017 up to 30.17 hours by 2030).

Figure 36: Scenario 3 - Increased hours worked

Headcount	2017	2019	2021	2026	2030
Supply	**21,149**	**22,232**	**23,206**	**25,741**	**28,205**
Supply (FTE)	**14,280**	**15,071**	**18,215**	**20,347**	**22,395**
Graduates	*1,212*	*1,203*	*1,267*	*1,442*	*1,600*
Migrants	*25*	*25*	*25*	*25*	*25*
Exits (% of supply)	*3.07%*	*3.32%*	*3.47%*	*3.51%*	*3.24%*
Demand	**21,149**	**22,119**	**20,012**	**22,130**	**23,830**
Demand (FTE)	**14,280**	**14,994**	**15,708**	**17,493**	**18,921**
Excess/Shortfall	**0**	**113**	**3,194**	**3,611**	**4,376**
Excess/Shortfall (FTE)	0	**77**	**2,507**	**2,855**	**3,474**

Legend:

No perceived shortage	In balance (± 3 per cent)	Only a slight perceived shortage	Perceived shortage

Assumptions

The simulation modelling techniques used to produce the projections rely on two key inputs:

- The set of assumptions about future conditions; and
- The data from which the model's parameters inputs and starting position are derived.

The assumptions are important as they affect the interpretation of workforce projection results. The projections provide likely outcomes given the assumptions on which they are based, so if any of the assumptions are not applicable or cease to reflect real world situations, the projections will not provide an accurate indication of future outcomes. For the input data, any inaccuracies that may exist will directly impact on the accuracy of the modelled results.

Major assumptions and data treatments underlying the scenarios are outlined in the following sections. These are critical to understand as the interpretation of the modelled outputs needs to be done in the context of the underpinning assumptions. However, details of the scenarios are first provided to give the context for those underpinning assumptions.

Supply assumptions

- The base midwifery workforce is set at 2017 levels.
- Workforce entrants enter the model as graduates or as internationally-trained midwives.
- Registered midwife graduates entering the workforce are grown based on historical growth rates based on Department of Education data.
- The inflow of midwives via migration is obtained from the Department of Home Affairs. The model holds constant the average of those that had no substantive visa between 2012 and 2017.
- The temporary migration is considered to be counted in the workforce already and replaced at the same rate year on year.
- Hours worked are calculated and applied separately for each age/gender cohort. The data from which hours worked is calculated is taken from the National Health Workforce Dataset (NHWDS) for 2017.
- Exit rates are a composite measure including all forms of removal from the AHPRA register, from one year to the next – these include the permanent or temporary

losses. The continuity of care (baseline) scenario looks at the midwives that did not renew their midwifery or their midwifery registration in the following year.

- Exit rates are calculated for each five year age/gender cohort, taken from the NHWDS between 2013 and 2017.
- The proportion of graduating domestic students and international migrants entering the workforce is calculated at 89 per cent and equates to the number of new entrants to the AHPRA register.
- All graduating midwives are assumed to remain in the workforce, even in situations of workforce supply exceeding demand. That is, exit rates are not adjusted to take account of possible movements away from a profession in an oversupply situation.

Appendix A: Workforce survey

Workforce Survey Form

Profession: Nursing & midwifery

WKSY-40NM

COMPLETING THIS SURVEY

Information supplied on this form may be provided to other persons and agencies for workforce planning. The Nursing and Midwifery Board of Australia and the Australian Health Practitioner Regulation Agency (AHPRA) are committed to ensuring the privacy and confidentiality of personal information held and will adhere to the National Privacy Principles under the *Privacy Act 1988* (Cth) when collecting, using, disclosing, securing and providing access to private information.

- Read all instructions
- Print clearly in BLOCK LETTERS using a black or blue pen
- Place X in ALL applicable boxes
- These questions are optional

Today's date: (DD / MM / YYYY) ☐☐ / ☐☐ / ☐☐☐☐

SECTION A: Your qualifications

1. Where did you obtain your initial qualification in nursing?

Mark one box only

Australia ☐ *Go to question 3*

New Zealand ☐ *Go to question 3*

Other overseas ☐ *Specify country below, then go to the next question*

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

2. Did you need to obtain any further qualifications or undertake an education program to gain registration in nursing in Australia?

☐ No

☐ Yes

3. Where did you obtain your initial qualification in midwifery?

Mark one box only

Australia ☐ *Go to question 5*

New Zealand ☐ *Go to question 5*

Other overseas ☐ *Specify country below, then go to the next question*

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

4. Did you need to obtain any further qualifications or undertake an education program to gain registration in midwifery in Australia?

☐ No

☐ Yes

SECTION B: Your employment

For the following questions, working includes the practice of nursing and/or midwifery, or work that is principally concerned with those disciplines, e.g. research, administration or teaching of nursing and/or midwifery, in which you:

- worked in Australia for a total of one hour or more LAST WEEK in a job or business (including own business) for pay, commission, payment in kind or profit;
- usually work, but were away from work on leave, on strike or locked out or rostered off.

5. LAST WEEK, were you working in nursing and/or midwifery in Australia ?

Mark one box only

☐ Yes (including on leave for less than three months)
Go to question 9

☐ Yes (but currently on leave for three months or more)
Go to question 9

☐ No
Go to the next question

6. LAST WEEK, why were you not working in nursing and/or midwifery in Australia?

Mark one box only

☐ Working in nursing and/or midwifery overseas
Go to question 8

☐ Working, but not in nursing and/or midwifery
Go to the next question

☐ Not working in paid employment at all
Go to question 8

☐ Retired from regular work
Go to question 29

7. LAST WEEK, what was your occupation?

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

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8. LAST WEEK, did you take active steps to look for work in nursing and/or midwifery in Australia?

Looking for work includes (either part-time or full-time):
- applying for work
- enquiring about a job
- answering an advertisement
- registering with an employment agency
- advertising for work
- contacting people about a job.

No ☐ *Go to question 29*

Yes ☐ *Go to question 29*

For questions 9-18, if you were on leave last week,answer for a typical week. **Exclude** hours on call not worked.

9. LAST WEEK, how many hours did you work in nursing and midwifery?

For example 20 hours in nursing, 20 hours in midwifery = 40 hours

	Nursing	Midwifery
Clinical roles *(nurses/midwives, including managers and supervisors, involved in **direct patient care**)*	☐☐☐ hours	☐☐☐ hours
Non-clinical roles *(including teacher, researcher, administrator or other)*	☐☐☐ hours	☐☐☐ hours
Total	☐☐☐ hours	☐☐☐ hours

10. LAST WEEK, in your clinical role, how many hours did you work in each sector in nursing?

Private *(including non-profit organisations)* ☐☐☐ hours

Public ☐☐☐ hours

11. LAST WEEK, in your clinical role, how many hours did you work in each sector in midwifery?

Private *(including non-profit organisations)* ☐☐☐ hours

Public ☐☐☐ hours

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For questions 12-18, answer for the job in which you worked the most hours last week.

12. LAST WEEK, what was your principal role in your main job in nursing?

Mark one box only

- ☐ Clinician *(nurses, including managers and supervisors, involved in **direct patient care**)*
- ☐ Administrator *(incl. managers not involved in direct patient care)*
- ☐ Teacher or educator
- ☐ Researcher
- ☐ Other - *Please specify:*

13. LAST WEEK, what was the principal area of your main job in nursing?

Mark one box only

- ☐ Critical care
- ☐ Emergency
- ☐ Mixed medical /surgical
- ☐ Medical
- ☐ Surgical
- ☐ Peri-operative
- ☐ Paediatrics
- ☐ Research
- ☐ Maternity care
- ☐ Neonatal care
- ☐ Child and family health
- ☐ Practice nursing
- ☐ Rehabilitation & disability
- ☐ Mental health
- ☐ Aged care
- ☐ Other
- ☐ Drug and alcohol
- ☐ Palliative care
- ☐ Community nursing
- ☐ Health promotion
- ☐ Management
- ☐ Policy
- ☐ Education

14. LAST WEEK, what was the principal work setting of your main job in nursing?

- ☐ General Practitioner (GP) practice
- ☐ Independent private practice
- ☐ Other private practice
- ☐ Hospital *(excluding outpatient service)*
- ☐ Outpatient service
- ☐ Community health care service
- ☐ Residential health care facility
- ☐ Aboriginal health service
- ☐ Hospice
- ☐ Commercial/business service
- ☐ Tertiary educational facility
- ☐ School
- ☐ Other educational facility
- ☐ Correctional service
- ☐ Defence force
- ☐ Other government department or agency
- ☐ Other

15. LAST WEEK, what was your principal role in your main job in midwifery?

Mark one box only

- ☐ Clinician *(midwives, including managers and supervisors, involved in **direct patient care**)*
- ☐ Administrator *(incl. managers not involved in direct patient care)*
- ☐ Teacher or educator
- ☐ Researcher
- ☐ Other - *Please specify:*

16. LAST WEEK, what was the principal area of your main job in midwifery?

Mark one box only

- ☐ Antenatal care
- ☐ Care during labour and birth
- ☐ Antenatal, Intra-partum and post-partum care
- ☐ Midwifery education
- ☐ Midwifery management
- ☐ Neonatal care
- ☐ Postnatal care
- ☐ Midwifery research
- ☐ Policy
- ☐ Other

17. LAST WEEK, what was the principal work setting of your main job in midwifery?

Mark one box only

- ☐ General Practitioner (GP) practice
- ☐ Specialist (O&G) practice
- ☐ Group midwifery practice/ caseload
- ☐ Independent private practice
- ☐ Hospital *(excluding outpatient service)*
- ☐ Outpatient service
- ☐ Aboriginal health service
- ☐ Community health care service
- ☐ Commercial/business service
- ☐ Tertiary educational facility
- ☐ Other educational facility
- ☐ Correctional service
- ☐ Defence force
- ☐ Other government department or agency
- ☐ Other

18. LAST WEEK, where was the location of your main job in nursing and/or midwifery?

For state and territory mark one box only

- ☐ NSW ☐ SA ☐ NT
- ☐ VIC ☐ WA ☐ ACT
- ☐ QLD ☐ TAS ☐ Other territories

Postcode

Suburb

19. Other than the location reported in question 18, do you also work in a regional, rural or remote location?

- No ☐ ▶ *Go to question 21*
- Yes ☐ ▶ *Specify state, postcode and suburb below, then go to the next question*

ⓘ If you work in more than one additional regional, rural or remote location, provide the one in which you work the most hours.

For state and territory mark one box only

- ☐ NSW ☐ SA ☐ NT
- ☐ VIC ☐ WA ☐ ACT
- ☐ QLD ☐ TAS ☐ Other territories

Postcode

Suburb

20. On average, how often do you work in this location?

Mark one box only, and report the frequency worked at this location

☐ Weekly	day(s) per week
☐ Fortnightly	days per fortnight
☐ Monthly	days per month
☐ Quarterly	days per quarter
☐ Annually	days per year

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21. In the past 12 MONTHS, did you attend any births as the primary midwife in a:

Mark all boxes that apply

- ☐ Hospital *Go to question 23*
- ☐ Birth centre *Go to question 23*
- ☐ Home *Go to question 22*
- ☐ Another location *Go to question 23*
- ☐ Didn't attend any births as the primary midwife *Go to question 23*

22. In the past 12 MONTHS how many home births did you attend as the primary midwife?

☐☐☐

23. On average how many hours per week did you practice via tele-health in midwifery?

Telehealth is the practice of midwifery from a distance, using information and telecommunication technology such as computers, telephone, video transmission, direct connection to instrumentation and image transmission.

☐☐

24. On average how many hours per week did you practice via tele-health in nursing?

Telehealth is the practice of nursing from a distance, using information and telecommunication technology such as computers, telephone, video transmission, direct connection to instrumentation and image transmission.

☐☐

SECTION C: Workforce intentions

25. In total, how many years have you worked in nursing in Australia?

Include years regardless of full-time or part-time status. Exclude time spent not working and unpaid leave.

☐☐ whole years

26. How many more years do you intend to remain in the nursing workforce in Australia?

☐☐ whole years

27. In total, how many years have you worked in midwifery in Australia?

Include years regardless of full-time or part-time status. Exclude time spent not working and unpaid leave.

☐☐ whole years

28. How many more years do you intend to remain in the midwifery workforce in Australia?

☐☐ whole years

SECTION D: Your details

29. Are you of Aboriginal or Torres Strait Islander origin?

Mark one box only

- ☐ No
- ☐ Yes - Aboriginal
- ☐ Yes - Torres Strait Islander
- ☐ Both Aboriginal and Torres Strait Islander

30. Are you a temporary resident?

- No ☐ *Thank you, no further questions.*
- Yes ☐ *Specify your visa type below*
  - ☐ 309 - Partner (offshore)
  - ☐ 402 - Training and Research
  - ☐ 417 - Working Holiday
  - ☐ 422 - Medical Practitioner
  - ☐ 444 - Special Category
  - ☐ 457 - Temporary Work (Skilled)
  - ☐ 485 - Temporary Graduate
  - ☐ 572 - Vocational Education and Training Sector
  - ☐ 573 - Higher Education Sector
  - ☐ 574 - Postgraduate Research Sector
  - ☐ 820 - Partner (onshore)
  - ☐ Other

Thank you, no further questions.

Please return this workforce survey to AHPRA in the same envelope as your renewal application

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Appendix B: Jurisdictional perspectives

1. Is the midwifery workforce in under or over supply from a state/territory perspective?	
ACT point of view	**Programs or strategies to address the situation**
• Undersupply of experienced midwives, leading to skill mix challenges • Good supply of new graduate midwives from local university	• Targeted national and international recruitment strategy for experienced midwives (>5yrs experience). • Increased number of new graduate places available. • Extension of new graduate program (2nd year) to support transition in Midwifery Group Practice (MGP) models. • Reintroduction of post graduate midwifery course at local university, incorporating an employment model.
NSW point of view	**Programs or strategies to address the situation**
• There is not a shortage of midwives in NSW but we know there are workforce challenges in some districts associated mainly with population growth.	• Local Health Districts use a range of strategies to ensure the required staffing is provided across the whole of a maternity services. • Vacancies are advertised by Local Health Districts when they occur. • Temporary vacancies fluctuate and occur for a number of reasons including maternity leave, long service leave and secondments. These vacancies are backfilled by utilisation of casual, part-time and agency staff, as well as recruitment. • As well as recruitment, Local Health Districts have a range of strategies to ensure that maternity staffing requirements are met, including using casually-employed and part-time staff when needed. • When planning their future midwifery workforce, Maternity services consider population growth and changes in complexity. Strategies to meet workforce requirements include employment of graduate midwives and postgraduate midwifery training places for registered nurses.
Northern Territory point of view	**Programs or strategies to address the situation**
• Supply is mostly adequate	• Incentives to work in NT: accommodation assistance, remote area safety initiatives (vehicle GPS, vehicle locking, Internet access), midwifery group practice, new EBA entitlements, short term contracts (versus Agency).

1. Is the midwifery workforce in under or over supply from a state/territory perspective?	
Queensland point of view	**Programs or strategies to address the situation**
• The birth-rate for Queensland dropped by around one per cent from 2016 (62,227) to 2017 (61,639). • The number of midwives graduating from undergraduate midwifery degrees increased by 40% from 2015 (127) to 2016 (178). According to the Labour Economics Office Queensland within the Department of Jobs and Small Business as of June 2018, the midwifery workforce is in balance from a state perspective. The majority of employers are able to fill their vacancies with suitable and qualified applicants in both metropolitan and regional areas. This indicates there is no shortage at a state level.	• The Office of the Chief Nursing and Midwifery Officer (OCNMO) is the Queensland Government's principal advisor on all matters relating to nursing and midwifery services. Their strategic priorities include: • Strengthen the health system and optimise service provision through the promotion of safe and economically sustainable models of care with midwives working to full scope of practice. • Promote best practice continuity of midwifery carer models and policy to support government directions and to maximise public investment across Queensland. • Enhance productivity, capacity and capability through learning and development opportunities, the utilisation of data intelligence, and promoting the impact of midwives. • Enable and influence across the health sector to inform and drive innovative change that meets community need. • Position the Office of the Chief Nursing and Midwifery Office, as an agent for change across public and private health sectors for improved services to Queenslanders.
South Australia point of view	**Programs or strategies to address the situation**
• There has been an oversupply of midwives in SA due to an increase in the number of graduate midwives applying to enter the workforce. • Of the three major universities in SA, two offer midwifery programs of study. The uncapping of midwifery student places in universities has resulted in more students graduating than there are graduate positions available in the SA midwifery workforce on a yearly basis.	• SA Health has increased in the number of new graduate positions over the past 5 years.
Tasmania point of view	**Programs or strategies to address the situation**
Undersupply • Recruiting to midwifery positions in Tasmanian maternity services is increasingly difficult. We rely more and	• Education and Training • 20 Clinical places are offered for the Tasmanian BMid program – for RNs (University of Southern Queensland). These places are established in 5

1. Is the midwifery workforce in under or over supply from a state/territory perspective?	
more on local graduating midwives as the pipeline for the workforce.	maternity services including the private sector. • Attrition has resulted in <20 graduates per year in the recent past. • Other students are supported at the discretion of the maternity service and these include students of direct entry midwifery programs. • Students spend time in midwifery led models - professional satisfaction has been shown to be higher in these models when compared to mainstream midwifery models. • Graduate positions are offered to all students in the public sector upon completion. Would need to check in the private sector re employment of graduate midwives. **Industrial issues** • Traditional workload strategies do not work well in midwifery – the model of care is very different to nursing. • Tasmania has implemented a midwifery specific safe staffing model (Birthrate Plus®) to ensure safe and sustainable workloads for midwives. • Tasmania is just the third jurisdiction to introduce this methodology. • This will be an important component in progressing effective recruitment strategies. **Employment** • As in nursing, employment recognises flexible arrangements, family friendly rostering etc.
Victoria point of view	**Programs or strategies to address the situation**
• Victoria does not run a centralised personnel management system for public hospitals. A small study undertaken in October 2018 concluded that there were shortages of midwives in some areas of Victoria.	• Direct liaison with heads of higher education provider schools of nursing and midwifery is being considered to determine if any systemic issues are preventing an increase in the volume of students with midwifery qualification and how such an outcome could be facilitated.
Western Australia point of view	**Programs or strategies to address the situation**
• The midwifery workforce is not in under or over supply. However there are concerns in regard to: • inflows with limited supervisory capacity available to train and mentor new graduates and limitations on undergraduate training caused by the	• Proposal to phase out paid midwifery student placement model through the introduction of new education programs where there is not a requirement to be a nurse.

1. Is the midwifery workforce in under or over supply from a state/territory perspective?	
limited number of births in the state. WA currently graduates 167 midwives per year from 4 WA based university programs and 1 interstate university program. • The paid employment model for midwifery students (post graduate programs) provides significant challenges in ensuring clinical placements can be secured. There is shift by health services toward unpaid midwifery student placements threatening the viability of some university programs. • Retention of experienced staff that are either approaching retirement age or dissatisfied with limited opportunities to operate at full scope of practice (e.g. limitations of models of care in operation). The education program is in conflict with the reality of midwifery care within the system.	

2. Is the midwifery workforce in over or under supply from a geographical perspective?	
ACT point of view	**Programs or strategies to address the situation**
• There is a 'relative' undersupply of experienced midwives in the ACT. With the consistent and good supply of graduating midwives (inexperienced), the workforce skill mix is diluted as more experienced midwives reduce their hours in the profession. This is further challenged by the relative small size of the ACT.	• Targeted national and international recruitment strategy for experienced midwives (>5yrs experience). • Increased number of new graduate places available. • Extension of new graduate program (2nd year) to support transition in Midwifery Group Practice (MGP) models. • Reintroduction of post graduate midwifery course at local university, incorporating an employment model.
NSW point of view	**Programs or strategies to address the situation**
• There is not a shortage of midwives in NSW but we know there are workforce challenges in some districts associated mainly with population growth, the Western suburbs of Sydney would be an example.	• NSW Health supports a number of scholarships for midwives; the aim of these scholarships is to support the recruitment, retention and skill development of registered midwives in the NSW public health system. • Rural postgraduate midwifery student scholarships support the sustainability of small rural maternity units by funding a local registered nurse to train as a midwife. NSW Health funds 10 positions per year. • Nursing and midwifery graduates are an integral part of the NSW nursing and midwifery workforce and their recruitment has contributed to the overall increase in nurse and midwife numbers.
Northern Territory point of view	**Programs or strategies to address the situation**
• Supply is adequate in the Top End, at present • In Central Australia, there are several unfilled vacancies (Alice Springs Hospital) • Unfilled vacancies go up over summer months every year	• Incentives to work in remote NT: accommodation assistance, remote area safety initiatives (vehicle GPS, vehicle locking, Internet access), midwifery group practice, new EBA entitlements, short term contracts (versus Agency)' promotional positions for Remote Area Midwife and Remote Area Midwifery Coordinators positions, professional development opportunities. • Central Australia have increased their employed model student intake (from 1 to 2). • New Graduate and student programmes improve workforce supply. • Additional Educators hours dedicated to improve retention. • Casual midwives are stable and reliable and are rostered according to availability limiting shortfall.

2. Is the midwifery workforce in over or under supply from a <u>geographical</u> perspective?	
	• Local applicants are employed in preference to non-local applicants.
Queensland point of view	**Programs or strategies to address the situation**
• The midwifery workforce is in minor under supply from a geographical perspective. Rockhampton, Emerald and Gladstone had difficulty recruiting.	• Queensland Health is recruiting experienced and early career midwives and has committed to recruit an additional 100 midwives to boost care for the regional and rural communities, such as Cape and Torres Strait, Toowoomba, Rockhampton, Mt Isa, Mackay and Wide Bay, through the regional & rural nursing and midwifery campaign and general election commitment.
South Australia point of view	**Programs or strategies to address the situation**
• Maldistribution exists in SA's midwifery workforce. • There is an oversupply of midwives in the metropolitan area inclusive of both senior and graduate positions. • Some country hospitals experience difficulties in attracting and retaining midwives due to lower numbers of birthing women, limited graduate positions, and the requirement for graduates to hold dual-registration in some country hospitals.	• Country hospitals have been proactive in 'growing their own' midwifery workforce and have included a greater focus on community settings. • SA nurses and midwives living and working in a rural and remote area are entitled to an employment incentive payment under the Nursing and Midwifery (South Australian Public Sector) Enterprise Agreement 2016. • SA Health offers an annual Study Assistance Program to support midwives to build upon their current knowledge and enhance their skills and expertise.
Tasmania point of view	**Programs or strategies to address the situation**
• Undersupply • Ongoing issues recruiting midwives to Northwest and North regions, though in the North this has eased over the past 2 years.	• Introduction of midwifery led models of care – nationally, these models are often more attractive to midwives. • Safe staffing model specific to midwifery • North Region has taken more student midwives and worked to retain all local graduates. Moving towards a match in numbers required, but skill mix remains a challenge.
Victoria point of view	**Programs or strategies to address the situation**
• The study referred to above showed that the shortages were predominantly in western regional Victoria and Gippsland (eastern regional Victoria).	• A workforce planning toolkit to assist health services to undertake more sophisticated workforce planning, including in recruitment, is being developed.
Western Australia point of view	**Programs or strategies to address the situation**

2. Is the midwifery workforce in over or under supply from a <u>geographical</u> perspective?	
• There is an undersupply of midwives in country regions as a result of the maldistribution with metropolitan regions (75% of midwives in metro and 25% in country).	• Introduction of Midwifery Group Practices (MGP) or midwifery led units as a recruitment strategy. • Amendments to Job Description Forms (JDF) to support non-registered nurse midwives to work in community and child health settings.

3. What proportion of the midwifery workforce is dual qualified?	
ACT point of view	**Programs or strategies to address the situation**
• In the ACT, the total number of those registered as either a midwife (RM) or as a registered nurse (RN) and RM (dual qualified) with the Nursing and Midwifery Board of Australia is 684 • 78% (543) are dual qualified RN/RM practitioners. • It is unknown how many of the dual qualified practitioners are actually practicing as midwives	• Scholarship program through the office of the Chief Nurse and Midwifery Officer. • Reintroduction of post graduate midwifery course at University of Canberra (UC), supported by The Canberra Hospital (TCH) through an employment model. • Partnership with Charles Sturt University (CSU) with employment model for post graduate midwifery students. • Investigation of career pathways for direct entry midwives, including introduction of midwifery positions (working to midwifery scope of practice) within the Maternal and Child Health Program (MACH).
NSW point of view	**Programs or strategies to address the situation**
Northern Territory point of view	**Programs or strategies to address the situation**
• More than 25% of midwives working in maternity services are dual qualified	• It is preferred that remote area Midwifery positions are filled with Dual qualified Nurse/Midwives, however this does not prohibit single qualified midwifes working in remote areas, with adequate support. • The tertiary hospital employs both dual and single qualified midwives. • Dual qualified midwives working in maternity services in Alice Springs Hospital represents 2/3 of all midwives, and at Royal Darwin Hospital they represent 3 /4 of all midwives.
Queensland point of view	**Programs or strategies to address the situation**
• 84% of the midwifery workforce is dual qualified. The midwifery workforce consists of 1,063 midwife only and 5,587 Nurse & Midwife (dual).Perhaps the shift in dual and single qualified midwives should be outlined here	• OCNMO has recognised the evidenced based shift in educational preparation with increased and growing numbers of midwives entering the profession from a Bachelor of Midwifery program. OCNMO is supporting graduate and early career midwives to enter continuity of carer models.
South Australia point of view	**Programs or strategies to address the situation**
• In SA 73% of midwives also hold nursing registration. • In 2018, 24% of applicants for the 2019 Transition to Professional Practice Program (TPPP) for midwives were dual registered.	• Dual-registered graduate positions are based in country areas due to the requirement for dual-registration in some country hospitals. • SA Health introduced a TPPP Collaborative Program for the 2019 graduate intake. The program is a joint venture between metropolitan hospital and country hospitals and enables graduates

3. What proportion of the midwifery workforce is dual qualified?	
	to experience working in both metropolitan and country settings.
Tasmania point of view	**Programs or strategies to address the situation**
• In 2017 96.7% of all employed midwives (headcount) in Tasmania were dual registered RN-Midwives, down from 98.3% in 2013.	• Dual registrants have been dropping the registration least relevant to their main body of work. In most cases, this has resulted in the midwifery registration not being renewed.
Victoria point of view	**Programs or strategies to address the situation**
• In Victoria 83 per cent of the maternity services workforce is dual registered. Only 14 per cent of the maternity services workforce have single midwifery registration, although an unknown number of these may be dual qualified but choose to not maintain their nursing registration. There is now only one Bachelor of Midwifery course in Victoria, which produces around 70 graduates p.a. Most Victorian midwives have dual qualifications, either a double nursing and midwifery degree or a graduate diploma in midwifery, or obtained their dual qualifications prior to the switch to university based education in the early 1990s. • It is expected that more than 45 per cent of the existing dual-registered workforce will retire over the next 10 years. • In Victoria the total midwife qualified workforce has fallen in each of the past four years.	• It is intended to discuss midwife supply issues with key industry stakeholders and explore organisational requirements for dual and single qualified workforce.
Western Australia point of view	**Programs or strategies to address the situation**
• As at Feb'18 based on paid FTE 38% of midwives were employed in dual roles in the WA public system. Of those in dual roles the majority 63% were based in the metropolitan area. Data is based on position titles and not registration. Excludes those dual registered midwives working in nursing only positions. • In 2016 based on head count from the National Health Workforce Dataset 88% of midwives registered and working in the WA public and/or private systems were dual registered. Based on remoteness area 75% of the dual registered midwives reside/work in the metropolitan area (i.e. remoteness area = major city). • This is consistent with 2018 NMBA data which reported 87% of midwives were dual registered.	• Edith Cowan University (ECU) currently has a dual degree program which was targeted at the country areas. However, the majority of graduates seek employment in the metro area with over 75% opting for midwifery transition to practice programs.

4. Is maintaining recency of practice for a midwife viewed as an issue from a state/territory perspective?	
ACT point of view	**Programs or strategies to address the situation**
• Not a specific issue locally • Marketing of re-entry graduate certificate at UC has not received strong interest	• Introduction of re-entry graduate certificate at UC for 2019 onwards. • All midwives have access to ongoing professional development opportunities • Plan to increase regular staff rotations through antenatal, birthing and postnatal care areas across Centenary Hospital for Women and Children. • Plan to increase access to MGP models .
NSW point of view	**Programs or strategies to address the situation**
• No	
Northern Territory point of view	**Programs or strategies to address the situation**
• It is an issue in certain areas where the scope of practice is limited to antenatal and postnatal care, yet unexpected births may occur.	• Exchange programs whereby certain midwives in areas of need will rotate into a larger unit for upskilling. • Use of teleconference and/or videoconference, for education, and also for clinical consultation.
Queensland point of view	**Programs or strategies to address the situation**
• Since large proportion of employers seek applicants with experience, graduates fail to find a job and may have trouble in maintaining recency of practice. • Midwives holding dual registration working in non-maternity settings can struggle to meet the requirements of the Nursing and Midwifery Board of Australia's (NMBA) recency of practice registration standard for with their midwifery registration. Research conducted in rural sites indicates dual registrants prefer to work in midwifery but often relinquish their registration due to the priority being nursing work by administrators and access to maternity areas to maintain skills. • Midwives' scope of practice remains largely, poorly understood and transfer of skills at graduation to practice and between employers and jurisdictions is variable impacting on recognition and application of skills to maintain recency and work to full scope.	• The Queensland Health graduate campaign seeks to ensure graduates have supported employment opportunities and encourages students to consider options outside south east Queensland to increase employment opportunities by making available broad geographical preferences. • OCNMO has undertaken a promotional campaign to profile the scope and skills of midwives from time of graduation. • OCNMO recognises barriers for midwives to work to their scope of practice and engages at a statewide level to advocate and educate employers on the comprehensive skills of these well-educated professionals to provide autonomous woman centred care. • OCNMO supports rural sites to transition to continuity of carer models and to adopt a caseload of women to ensure access to work to full scope and maintain recency of practice. This has proven to improve workforce retention in maternity settings.

4. Is maintaining recency of practice for a midwife viewed as an issue from a state/territory perspective?	
South Australia point of view	**Programs or strategies to address the situation**
• This is not considered an issue in SA. Midwives holding dual registration working in non-maternity settings can struggle to meet the requirements of the Nursing and Midwifery Board of Australia's (NMBA) recency of practice registration standard for with their midwifery registration.	• In 2019 the University of South Australia introduced a re-entry to practice certificate for midwives. • Midwives who hold dual registration and work in non-maternity settings can choose to maintain their registration by seeking employment in hospital casual pools or with employment agencies.
Tasmania point of view	**Programs or strategies to address the situation**
• If the midwife is a dual registrant working the majority of the time in the context of the other registration (eg nursing, paramedicine etc.), maintaining recency can be problematic. • Not aware that this is an issue in Tasmania	• With Child Health and Parenting Service (CHAPS) transferring to the Tasmanian Health Service, it is easier for CHAPS nurses to maintain their recency. • In rural locations in the Northern region where the flexibility of dual registrants is valued, but limited opportunities exist to maintain recency of practice (particularly for midwifery), efforts are being made to enable rotations to larger regional centres, and include rural dual registrants in education opportunities.
Victoria point of view	**Programs or strategies to address the situation**
• Yes, particularly in smaller, rural maternity services, ensuring each midwife has the required clinical experience annually can be a challenge. .	• The development of midwifery group practices and shared care models is being encouraged. • Victoria has completed a major review of perinatal services and the government is considering the recommendations from this review at present. • Maternity Connect is a VDHHS project run by Western Health which supports public Rural Maternity Services and their workforce. This program focuses on supporting midwives and nurses working in maternity services to develop and maintain their skills and competence through a clinical exposure placement in higher-level service than in which they normally work. • Maternity Services Education Program, a state-wide clinical education program delivering multidisciplinary education onsite in Victorian maternity services, led by the Royal Women's Hospital, Melbourne.

4. Is maintaining recency of practice for a midwife viewed as an issue from a state/territory perspective?	
Western Australia point of view	**Programs or strategies to address the situation**
• Recency of practice is not considered an issue. This statement needs to be qualified in that midwives in non-clinical roles that do not involve "hands on" clinical practice would generally meet recency of practice in terms of maintaining adequate connection with advancements and changes to the profession but this may not always equate to actual clinical practice. Approximately 8% of midwives occupy these types of roles in the public system. • There is significant focus on the birth episode of care, but this is a small component of the midwives practice. More clarity is required around context of practice for those that do not work in a clinical area, but utilise their knowledge and skills to support the profession.	• WA has a midwifery refresher program for midwives that have not practised in the previous five years, but are still registered as midwives.

5. Are there currently unfilled vacancies in the midwifery workforce?	
ACT point of view	**Programs or strategies to address the situation**
•Yes	• See section 1 above. • Use of agency staff on short term contracts to fill shortfalls. • Workforce strategy development, including both recruitment and retention strategies. • Robust program in place to retain graduates at the end of the new graduate program. • Ongoing education and support program for less experienced midwives. • Flexible work conditions, including part time. • Introduction of a part time team within the MGP models. • Plan to introduce a rostered team within the birth centre to complement the case load models in 2019.
NSW point of view	**Programs or strategies to address the situation**
• Vacancies are monitored at a local level	• Birthrate Plus® is a workload tool from the UK developed specifically for maternity services to calculate the required midwifery workforce. • In 2011 it was adopted for use in NSW maternity services following an extensive period of testing to ensure it met the needs of the NSW health environment. • It is an industrial requirement for maternity services of sufficient size to use Birthrate Plus® and implement the staffing as calculated (NSW Public Health System Nurses' and Midwives (State) Award 2017)
Northern Territory point of view	**Programs or strategies to address the situation**
• There are no unfilled vacancies in Royal Darwin Hospital at present, Alice Springs have minimal vacancies at present	• Current recruitment drive, enhancement of the eRecruit system to make applications more accessible, streamlined and timely in response, innovative opportunities (eg in humanitarian health practice), career opportunities (eg • Remote Area Coordinators), single qualified midwives job opportunities (eg in Midwifery Group Practice), New to Practice Program initiatives (as compared to Graduate Programs). • Conference booth's with evolving email list.

5. Are there currently unfilled vacancies in the midwifery workforce?	
	• Nursing and Midwifery Strategy 2018-2022 identified recruitment and retention of workforce as a priority. • Nursing and Midwifery NT Workforce plan in development. • Career pathways for Aboriginal and Torres Strait Islander practitioners in place. • New to Practice framework to provide support and supervision for midwives in their first 2 years of practice.
Queensland point of view	**Programs or strategies to address the situation**
• According to the Labour Economics Office Queensland within the Department of Jobs and Small Business as of June 2018, there are no unfilled vacancies in metropolitan areas of the state. However, regional vacancies unfilled decreased from 30% in 2017 to 17% in 2018. • Some rural and remote vacancies exist, and are often filled by agency midwives or through offering short term contracts.	• Queensland Health is recruiting experienced midwives in regional and rural communities, such as Cape York and Torres Strait, Toowoomba, Rockhampton, Mt Isa, Mackay and Wide Bay, through the regional & rural nursing and midwifery campaign. Queensland Health committed to employ an additional 100 midwives between December 2018 and June 2019 in partnership with the needs identified by the individual Hospital and Health Services across the state. The OCNMO initiated a rural exchange program between metropolitan areas that enhances understanding of rural and remote services and provides a period for nurses and midwives to experience the work environment before committing
South Australia point of view	**Programs or strategies to address the situation**
• There are minimal midwife workforce vacancies in SA although some rural and remote vacancies exist. These are often filled by agency midwives or through offering short term contracts. • From a graduate perspective, all TPPP midwifery programs have been filled on a yearly basis.	• Country Health SA offer study scholarships for staff who demonstrate a strong commitment to continued professional practice in country and regional areas of South Australia.
Tasmania point of view	**Programs or strategies to address the situation**
• Yes • Situation in the North is very fluid, with <5% recurrent vacancies	• Not a significant issue at present for Tasmania as a whole. Organisational restructure has helped some dual registrants maintain both registrations. • Some international recruitment has been undertaken. • North region interim fills vacancies with existing employees working over contract until recruitment action is completed. The main challenge is finding midwifery

5. Are there currently unfilled vacancies in the midwifery workforce?	
	resources when unexpected spikes in activity occur.
Victoria point of view	**Programs or strategies to address the situation**
• Yes, and some of these vacancies are understood to have been unfilled for an extended period.	• Many rural health services have difficulty recruiting a wide range of health professionals, including midwives. • The VDHHS offers a variety of training and development programs including post-graduate scholarships in regional and rural maternity services.
Western Australia point of view	**Programs or strategies to address the situation**
• Yes in country regions agency midwives are consistently used to backfill vacancies. Casual and part time midwives form a large part of the workforce to meet the work-life balance.	• Introduction of MGPs or midwifery led units as a recruitment strategy. • Amendments to JDFs to support non-registered nurse midwives to work in community and child health settings.

6. Are there any innovative models of care in place to address supply of or demand for the midwifery workforce?	
ACT point of view	**Programs or strategies to address the situation**
• The birth rate in the ACT region is quite stable. However, distribution is disproportionate across public birthing facilities. • Demand for caseload midwifery models is higher than capacity, with low risk and all risk models in place.	• Development of maternity access strategy to manage demand across the region. • Single intake for the Territory to support appropriate allocation to models for maternity care. • Planned introduction of rostered team for birth centre to complement case load models. • Focus on flexible working arrangements.
NSW point of view	**Programs or strategies to address the situation**
• NSW Health already uses an evidence-based midwifery workforce planning methodology to determine the staffing requirements in maternity services based on the needs of women for midwifery care throughout pregnancy, labour and the postnatal period.	• Rural postgraduate midwifery student scholarships support the sustainability of small rural maternity units by funding a local registered nurse to train as a midwife. These services could not otherwise fund the employment of a midwifery student, in addition to their existing FTE profile. NSW Health funds 10 positions per year. • Some LHDs have implemented modified case load models of care (antenatal/postnatal) as an innovative model to support continuity of care for women and to support the midwifery workforce.
Northern Territory point of view	**Programs or strategies to address the situation**
• Yes	• Continuity of care/carer models to support patient centred care eg for vulnerable women involving continuity of carer, and continuity of care planning. These include Midwifery Group practices, collaborative models (Health Services and NGO's eg Aboriginal Controlled Community Health Organisations). • Charles Darwin University (CDU) commencing Bachelor of Nursing Master of Midwifery dual degree (2020). • CDU commencing Nurse Practitioner Advanced Midwifery Practice (2021).
Queensland point of view	**Programs or strategies to address the situation**
• There are eight main options for maternity care in Queensland. Access to these maternity models depends on the services provided in the local area. The eight main options:	• The Office of the Chief Nursing and Midwifery Officer commits to strengthening sustainable primary midwifery models of care that are responsive to women's and community needs through optimising professional midwifery resourcing.

6. Are there any innovative models of care in place to address supply of or demand for the midwifery workforce?	
1. Midwifery led continuity of care: Maternity care is provided by a midwife or small group of midwives (2 to 3) and is provided in most public hospitals. Access to a hospital-based midwife care usually requires a GP referral. This model also enables midwives to provide care for women with complicated pregnancies by working collaboratively with doctors and other healthcare providers. 2. Private midwife care: Maternity care is provided by a midwife or group of midwives from a private group practice for your pregnancy, birth and postnatal care. In this model you have the option of choosing whether to have your baby in hospital or at home. 3. GP share care: Maternity care is shared between the GP and the local hospital doctors and midwives. Not all GPs provide maternity shared care. 4. Private obstetric care: Maternity care is provided by an obstetrician who is a medical doctor specialised in caring for pregnant women, including those with complicated pregnancies or special circumstances. Private care can be provided in a public or private hospital. 5. Public hospital maternity care: Antenatal care is provided in hospital outpatient clinics (either onsite or in the community or woman's home) by hospital-employed midwives and/or doctors. Care could also be provided by a multidisciplinary team dependent on the complexity of care needed. Collaborative intrapartum and postnatal care is provided in the hospital by midwives and doctors. Postnatal care may continue in the home or community by hospital midwives. 6. It has been researched and reported that continuity of carer models are a sound workforce attraction and retention strategy due to decreased stress and improved satisfaction of midwives who work in these models. 7. Some closures of private hospitals in the state and a shift away from private obstetric care has increased demand on public hospital care. State-wide, the demand for midwifery continuity of care	• The Office of the Chief Nursing and Midwifery Officer values and supports women being offered their option of maternity care. Queensland Health supports midwives working in all models of care across public and private health care sectors and settings. • The Office of the Chief Nursing and Midwifery Officer has developed a maternity decision-making framework to scale up and roll out midwifery continuity of carer models. • The Office of the Chief Nursing and Midwifery Officer has also developed interactive costing tools to support hospital and health services to build their business case for continuity of midwifery models. • Midwifery navigators have been introduced across health services to recognise the unique skills of experienced midwives and to improve co-ordination of care for women with complex needs and for those who are hard to engage and otherwise less likely to receive optimal recommended levels of care, • Existing evidence has demonstrated that midwives are well placed and suited to extend their scope to improve outcomes across the first one thousand days. A scoping project is underway to determine best models for the first one thousand days of life appropriate to demographic and geographic needs of populations. • Private practicing midwives have access agreements in place across 11 of the 15 HHSs in the state. • OCNMO has provided guidance to Hospital and Health Services across the state to enable Midwives holding the NMBA *Endorsement for scheduled medicines for midwives* to prescribe in public sector roles, albeit acceptance and uptake by HHSs is slow.

6. Are there any innovative models of care in place to address supply of or demand for the midwifery workforce?	
models far exceeds places available, although opportunities to maximise women's access to these models is continually being reviewed and assessed. 8. Queensland is one of two jurisdictions in Australia without a publicly funded home birth model.	
South Australia point of view	**Programs or strategies to address the situation**
• Overall the birth rate in SA remains stable. • Several private maternity services are scheduled to close which will increase the demand for maternity care in the public sector. • SA offers a variety of models of care including GP Shared Care, midwifery continuity of care models for women of all risk, public hospital midwifery clinics, Aboriginal Family Birthing Programs and medically-led clinics in both the public and private sector. • State-wide, the demand for midwifery continuity of care models far exceeds places available, although opportunities to maximise women's access to these models is continually being reviewed and assessed.	• SA Health offers publically-funded home birth through the major tertiary maternity hospitals through group practice models of care. • In July 2019 an all-risk midwifery caseload model of care will commence in country SA's Yorke and Northern Region. This model will span across five country hospitals that provide birthing services. It is anticipated that this new model will improve the long-term sustainability and increase the capability of rural birthing services. This program will initially be trialled as a pilot program with the intent to implement in other rural regions following evaluation. • Midwives holding the NMBA Endorsement for scheduled medicines for midwives have been enabled to prescribe in public sector roles. • Private midwifery care is able to be provided in SA public hospitals under the SA Health Privately Practising Midwives Access to Public Sector Maternity Services Policy Directive
Tasmania point of view	**Programs or strategies to address the situation**
• As above – midwifery led models will grow into the future to maximise professional satisfaction of midwives • Job satisfaction in the North is good, but this information is informally obtained.	• Growing acceptance of less traditional midwifery models: Women in the North region have been used to a fairly traditional midwifery model. As midwifery group practice becomes a more longstanding feature of the local health environment, women are accepting and seeking it more. Team Midwifery (KIM) has been well accepted as a step between the traditional model and MGP, without early discharge but with smaller teams for better continuity of care. • Formal measures of job satisfaction, and reason for leaving (exit interview/survey) are not strongly maintained.

6. Are there any innovative models of care in place to address supply of or demand for the midwifery workforce?	
Victoria point of view	**Programs or strategies to address the situation**
• Yes, quite a lot is being done to develop innovative models of care, partly to address supply issues but also to improve the client experience for mothers. • In rural areas there is a preference for dual-qualified nurse and midwife, but this can make it difficult for individual midwives to maintain recency of practice.	• There are a number of innovative midwife-led models being developed and expanded, including Midwifery Group Practices. Some of the proposed or piloted models are more costly than existing models. Collaborative arrangements which see private midwives able to care for women in public maternity services are being considered.
Western Australia point of view	**Programs or strategies to address the situation**
• 13 Group practice models • Career pathways for direct entry midwives to extend practice to include family and child health care.	• Introduction of a midwifery led unit in a regional centre. • Introduction of a Community midwife role. • Investigation of career pathways for endorsed midwives.

Appendix C: National Nursing and Midwifery Education and Advisory Network and Midwifery Technical Advisory Group Members

National Nursing and Midwifery Education and Advisory Network

Adjunct Professor Debra Thoms (Chair), Commonwealth Chief Nursing and Midwifery Officer

Adjunct Associate Professor Francine Douce, Chief Nurse and Midwife, Department of Health, Tasmania

Adjunct Associate Professor Ann Maree Keenan, Deputy CEO, Safer Care Victoria, Chief Nurse and Midwifery Officer, Victoria

Ms Carole Little, Acting Executive Director AMEP, Access, Community & Health, South Metropolitan TAFE, Western Australia

Professor Tracey Moroney, Deputy Dean, Faculty of Science, Medicine and Health, Head of School, Chair, Council of Deans of Nursing and Midwifery

Ms Elizabeth Porritt, General Manager, National Capital Private Hospital, Canberra, Acting State Manager, ACT/NSW Southern Region

Professor Di Twigg, Executive Dean, Professor of Nursing School of Nursing and Midwifery, Research Consultant, Centre for Nursing Research Sir Charles Gairdner Hospital, Edith Cowan University

Midwifery Technical Advisory Group

Ms Lynne Gillam (Chair), Assistant Secretary, Health Workforce Reform Branch, Department of Health

Professor Fiona Bogossian, Practice Education in Health and Academic Lead, Sunshine Coast Health Institute (Former role, Associate Professor, University of Queensland)

Ms Karen Cook, Senior Nursing and Midwifery Advisor, Office of the Chief Nursing and Midwifery Officer, Department of Health

Ms Chris Cornwell, Member, Australian College of Midwives

Professor Hannah Dahlen, Professor of Midwifery, Western Sydney University

Ms Colleen Gibbs, Senior Policy Officer, Congress of Aboriginal and Torres Strait Islander Nurses and Midwives

Associate Professor Joanna Gray, Associate Dean, University of Technology Sydney

Ms Ann Kinnear, CEO, Australian College of Midwives

Ms Maureen McCarty**,** Director, Workforce Data Analysis Section, Department of Health

Dr Michelle Newton, Bachelor of Nursing and Bachelor of Midwifery Course Coordinator, La Trobe University, Bundoora

Adjunct Professor Debra Thoms, Commonwealth Chief Nursing and Midwifery Officer