

Medical Radiation Practitioners



2017 Factsheet

Medical radiation practitioners are registered healthcare practitioners who perform diagnostic imaging studies on patients, plan and administer radiation treatments, or prepare and administer nuclear medicine.

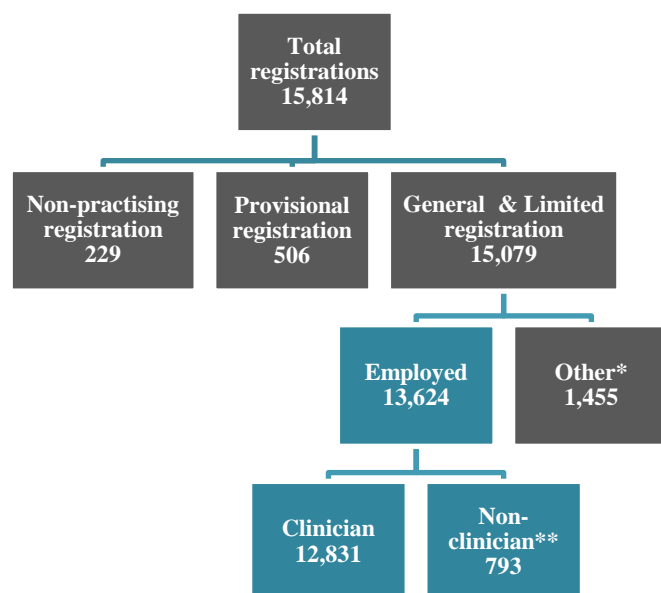
There are three divisions of practice for medical radiation practitioners: nuclear medicine technology, radiation therapy and diagnostic radiography.

To gain registration, medical radiation practitioners must complete a minimum three-year undergraduate, or two-year postgraduate Master program of study approved by the Medical Radiation Practice Board of Australia.

The following analysis is drawn from the number of medical radiation practitioners with general/limited registration who were employed (13,624 in 2017) unless otherwise stated.

Workforce

Figure 1: Medical radiation practitioner registrations, 2017



*'Other' includes: working but on long leave, working outside the profession, looking for work, overseas, and retired.

**'Non-clinician' includes roles reported by survey respondents that did not fit predefined survey categories.

The number of registered medical radiation practitioners increased by 7.7% from 14,680 in 2014 to 15,814 in 2017 (average annual increase of 2.5%). The number of employed medical radiation practitioners increased by 10.1% from 12,379 to 13,624 over the same period (an average annual increase of 3.2%).

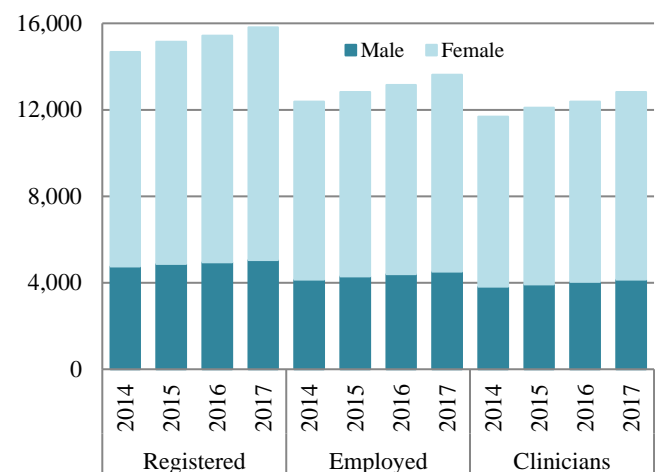
Table 1: Medical radiation practitioners, 2014-2017

	2014	2015	2016	2017	Avg. annual growth
Registered	14,680	15,149	15,437	15,814	2.5%
Employed	12,379	12,830	13,156	13,624	3.2%
Clinicians	11,688	12,094	12,382	12,831	3.2%

Demographics

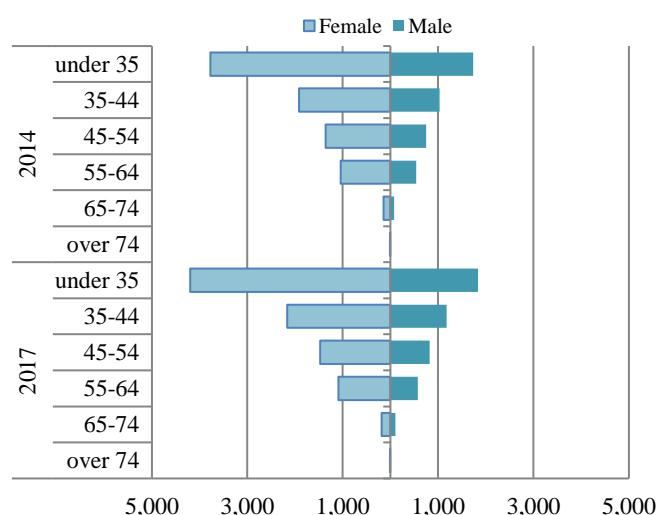
In 2017, 66.8% of medical radiation practitioners were female, an increase from 66.5% in 2014.

Figure 2: Gender distribution, 2014-2017



In 2017, the average age of medical radiation practitioners was 39.0 years, remaining unchanged from 2014. Between 2014 and 2017, the age and gender distribution of medical radiation practitioners has remained relatively stable.

Figure 3: Age and gender distribution, 2014 and 2017



Quick Facts - 2017

Figure 4: Summary, 2017

39.0	Average age
35.1	Average weekly hours
66.8	% female
68.5	% born in Australia
0.5	% Aboriginal and/or Torres Strait Islander
82.3	% with Australian qualifications
79.1	% in major cities

Replacement Rate

In 2017, there were 1.6 new registrants for every medical radiation practitioner that did not renew their registration from 2016.

Hours Worked

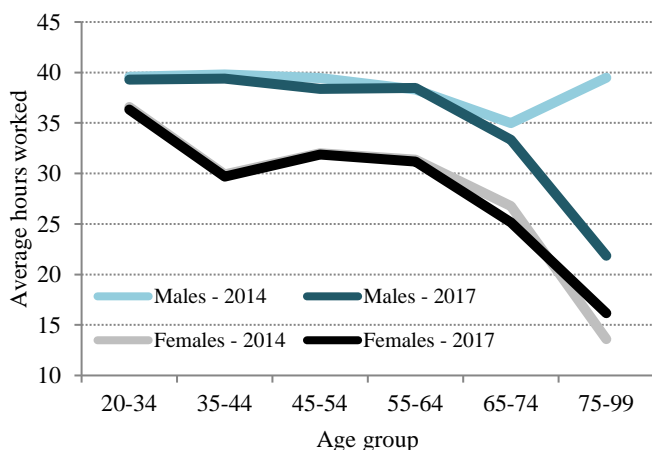
In 2017, medical radiation practitioners worked an average of 35.1 hours per week in total, and worked an average of 2.6 hours per week in non-clinical roles.

Table 2: Average hours per week, 2014-2017

Average hours worked	2014	2015	2016	2017
Clinical	32.7	32.8	32.4	32.5
Non-clinical	2.7	2.7	2.7	2.6
Total	35.4	35.5	35.0	35.1

In 2017, female medical radiation practitioners worked an average of 33.2 hours per week, a decrease from 33.4 hours in 2014. Male medical radiation practitioners worked an average of 38.9 hours per week, decreasing from 39.4 hours in 2014. In 2017, males in the 35-44 age group worked the most hours, at 39.4 hours per week on average.

Figure 5: Average hours worked per week by gender and age group, 2014 and 2017



Principal Role

In 2017, 94.2% of medical radiation practitioners worked as a clinician in their principal role, a small decrease from 94.4% in 2014.

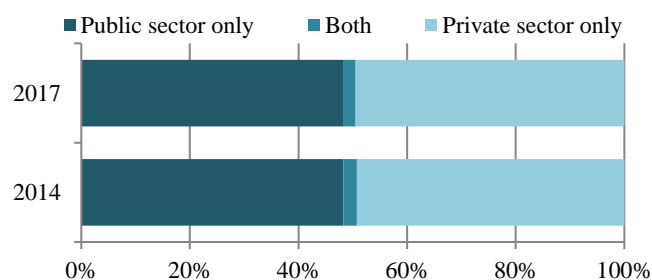
Table 3: Principal role, 2014 and 2017

Principal role	2014		2017	
	Headcount	%	Headcount	%
Clinician	11,688	94.4	12,831	94.2
Administrator	362	2.9	345	2.5
Teacher or educator	193	1.6	252	1.8
Researcher	60	0.5	68	0.5
Other	76	0.6	128	0.9
Total	12,379	100	13,624	100

Principal Work Sector

In 2017, 48.3% of medical radiation practitioners reported that in their principal role, they worked only in the public sector, remaining unchanged from 2014.

Figure 6: Sector in which clinical hours were worked, 2014 and 2017



Principal Work Setting

In 2017, 55.3% of medical radiation practitioners worked in an Hospital setting, remaining unchanged from 2014, 32.4% worked in Group private practice, an increase from 31.6% in 2014, and 5.4% worked in Solo private practice, a decrease from 6.0% in 2014.

Table 4: Principal work setting, 2014 and 2017

Principal work setting	2014		2017	
	Head count	Avg. total hours	Head count	Avg. total hours
Hospital	6,845	36.1	7,538	35.7
Group private practice	3,910	34.8	4,420	34.2
Solo private practice	743	34.9	736	34.7
Community health care service	153	30.7	181	30.8
Other private practice	182	33.6	177	34.1
Other government department	179	31.2	159	31.1
Tertiary educational facility	142	35.8	146	36.4
Other	72	36.1	99	34.9

Principal work setting	2014		2017	
	Head count	Avg. total hours	Head count	Avg. total hours
Locum private practice	57	31.7	70	38.5
Other commercial / business service	62	40.2	65	39.3
Remaining work settings	34	33.7	33	38.4
Total	12,379	35.4	13,624	35.1

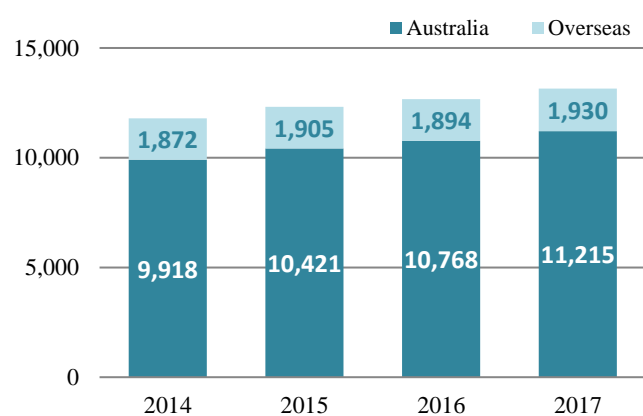
Note: 'np' indicates that the average total hours are not available for this combined category.

In 2017, medical radiation practitioners working in Other educational facilities (included in 'Remaining work settings') reported the highest average weekly hours (41.7) and those in Community health care services reported the lowest average weekly hours (30.8).

Initial Qualification

The workforce survey asks medical radiation practitioners where they obtained their initial qualification. In 2017, 82.3% of medical radiation practitioners obtained their initial qualification in Australia and 14.2% obtained their initial qualification overseas.

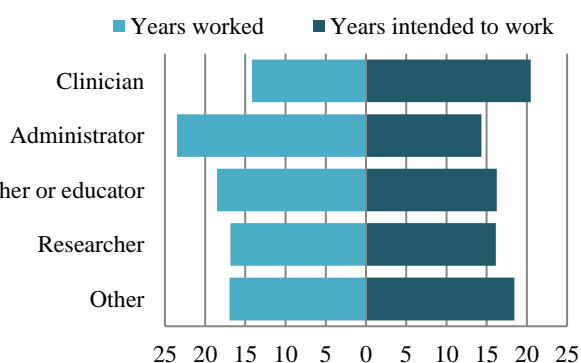
Figure 7: Initial qualifications, 2014-2017



Working Intentions

In both 2014 and 2017, medical radiation practitioners had, on average, worked 15 years in the profession and intended to work for another 20 years.

Figure 8: Workforce intentions by principal role, 2017



Distribution

State and Territory

In 2017, the jurisdictions with the most full-time equivalent medical radiation practitioners per 100,000 population (FTE rate) were QLD and SA. Between 2014 and 2017, the total FTE rate increased from 49.1 to 51.1 and QLD had the largest FTE rate increase (5.7).

In 2017, medical radiation practitioners in the NT worked the most hours per week on average (36.3 hours) and those in SA and NSW worked the fewest (34.0 hours).

Table 5: Distribution by state/territory, 2017

State / Territory	Headcount	Total FTE	Avg. total hours	² FTE rate per 100,000 population
NSW	4,492	4,018.8	34.0	51.1
VIC	3,362	3,164.0	35.8	50.0
QLD	2,926	2,789.7	36.2	56.6
SA	1,065	953.1	34.0	55.3
WA	1,164	1,074.9	35.1	41.7
TAS	281	265.7	35.9	50.9
ACT	238	216.6	34.6	52.6
NT	92	87.9	36.3	35.5
Total	13,624	12,574.6	35.1	51.1

Note: 'Not stated/Unknown' responses are excluded from this table but are included in the total

Remoteness Area

In 2017, 94.0% of medical radiation practitioners worked in either major cities or inner regional locations, compared to 94.2% in 2014.

Between 2014 and 2017, the largest shift in average hours worked was in very remote areas, decreasing from 35.4 hours per week in 2014 to 31.8 hours in 2017. However the FTE rate in very remote areas increased by 0.2 due to the increase in the number of medical radiation practitioners in these areas.

Table 6: Medical radiation practitioner distribution by remoteness area, 2017

Remoteness Area	Headcount	Total FTE	Avg. total hours	² FTE rate per 100,000 population
Major cities	10,773	9,942.8	35.1	56.3
Inner regional	2,056	1,880.1	34.8	42.8
Outer regional	695	658.1	36.0	32.1
Remote	72	69.6	36.7	23.8
Very remote	25	20.9	31.8	10.4
Total	13,624	12,574.6	35.1	51.1

Note: 'Not stated/Unknown' responses are excluded from this table but are included in the total

Other Work Location Outside Major Cities

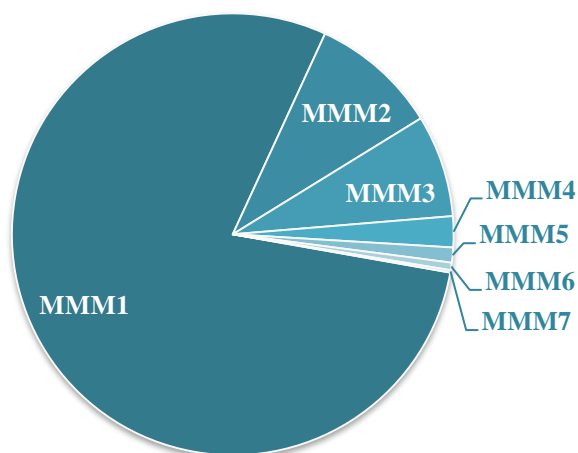
In 2017, 4.2% of medical radiation practitioners reported that they had worked in a regional, rural or remote location, in addition to their principal job location. Of these respondents, 53.8% had worked in an inner regional location, 20.3% had worked in an outer regional location, and 5.9% had worked in either a remote or very remote location.

Modified Monash Model

In 2017, the majority (79.1%) of FTE medical radiation practitioners were located in a major city or a location considered as MMM1 under the Modified Monash Model (MMM) classification system, down from 79.4% in 2014.

(See www.doctorconnect.gov.au for more information on the MMM.)

Figure 9: FTE distribution by MMM location, 2017



Tele-Health

The workforce survey asks medical radiation practitioners to report their hours practiced via tele-health in medical radiation practice in the previous year.

Note: Tele-health is the use of telecommunication techniques for the purpose of providing telemedicine, medical education, and health education over a distance.

A total of 922 medical radiation practitioners (6.8%) provided a response to the Tele-Health question in 2017. On average, these respondents practiced via Tele-Health for 21.0 hours per week, with the majority (74.8%) of Tele-Health services provided by practitioners based in a major city.

Table 7: Tele-Health medical radiation practitioners by remoteness location, 2017

Major cities	Inner regional	Outer regional	Remote	Very remote
74.8%	16.8%	6.2%	1.6%	0.5%

Note: The tele-health workforce remoteness location refers to the location of the medical radiation practitioners, not the location of the person receiving the service.

Divisions of Practice

Medical Radiation Practitioners may be registered in multiple divisions of practice; Nuclear Medicine Technology, Radiation Therapy and Diagnostic Radiography.

An employed medical radiation practitioner with registration in more than one division is counted as employed in each of the divisions reported. In 2017, there were 21 medical radiation practitioners who held registration in more than one division. Therefore, the numbers in each division may exceed the total number of employed medical radiation practitioners.

The following analysis is drawn from the number of medical radiation practitioners with general/limited registration in the specified division who were employed (1,091 nuclear medicine technologists, 2,016 radiation therapists and 10,536 diagnostic radiographers in 2017) unless otherwise stated.

Nuclear Medicine Technology Division

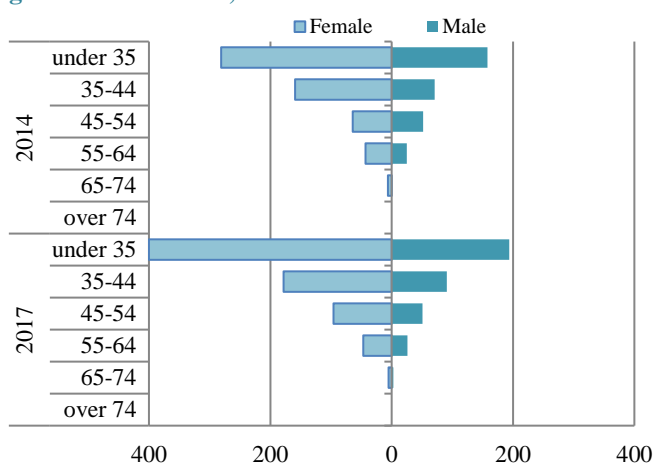
The number of registered nuclear medicine technologists increased by 43.2% from 1,048 in 2014 to 1,501 in 2017 (average annual increase of 12.7%). The number of employed nuclear medicine technologists increased by 27.0% from 859 to 1,091 over the same period (an average annual increase of 8.3%).

Table 8: Nuclear medicine technologists, 2014-2017

Nuclear medicine technology	2014	2015	2016	2017	Avg. annual growth
Registered	1,048	1,104	1,142	1,501	12.7%
Employed	859	892	941	1,091	8.3%
Clinicians	810	842	894	1,029	8.3%

In 2017, 66.5% of nuclear medicine technologists were female, an increase from 64.4% in 2014. Between 2014 and 2017, the proportion of females aged under 35 years increased from 32.7% in 2014 to 36.7% in 2017.

Figure 10: Nuclear medicine technologists - age and gender distribution, 2014 and 2017



Radiation Therapy Division

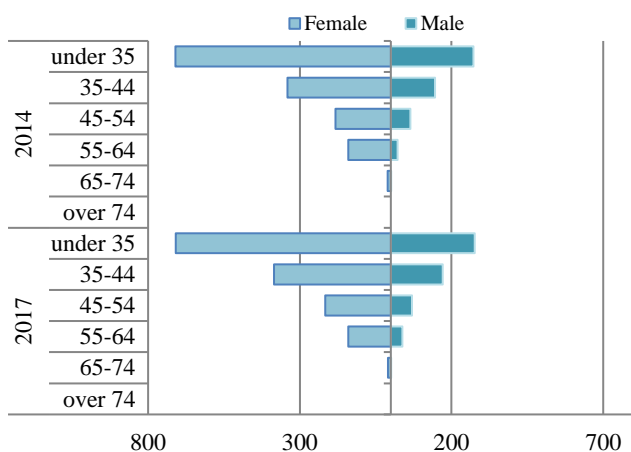
The number of registered radiation therapists increased by 2.6% from 2,295 in 2014 to 2,354 in 2017 (average annual increase of 0.8%). The number of employed radiation therapists increased by 6.8% from 1,888 to 2,016 over the same period (an average annual increase of 2.2%).

Table 9: Radiation Therapists, 2014-2017

Radiation therapy	2014	2015	2016	2017	Avg. annual growth
Registered	2,295	2,325	2,350	2,354	0.8%
Employed	1,888	1,895	1,952	2,016	2.2%
Clinicians	1,726	1,739	1,767	1,846	2.3%

In 2017, 72.4% of radiation therapists were female, a decrease from 73.3% in 2014. Between 2014 and 2017, the proportion of females aged under 35 years decreased from 52.0% in 2014 to 48.9% in 2017.

Figure 11: Radiation therapists - age and gender distribution, 2014 and 2017



Diagnostic Radiography Division

The number of registered diagnostic radiographers increased by 5.5% from 11,355 in 2014 to 11,980 in 2017 (average annual increase of 1.8%). The number of employed diagnostic radiographers increased by 9.2% from 9,648 to 10,536 over the same period (an average annual increase of 3.0%).

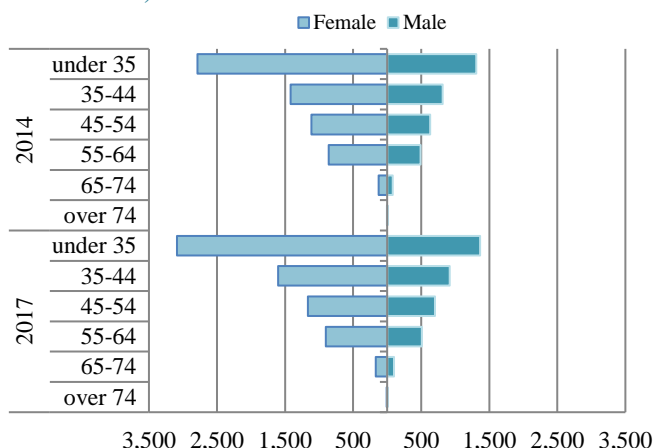
Table 10: Diagnostic radiographers, 2014-2017

Diagnostic Radiography	2014	2015	2016	2017	Avg. annual growth
Registered	11,355	11,736	11,962	11,980	1.8%
Employed	9,648	10,058	10,280	10,536	3.0%
Clinicians	9,167	9,527	9,736	9,972	2.8%

In 2017, 65.8% of diagnostic radiographers were female, an increase from 65.4% in 2014. Between 2014 and 2017, the age and gender distribution of

diagnostic radiographers remained relatively stable.

Figure 12: Diagnostic radiographers - age and gender distribution, 2014 and 2017



Distribution

Nuclear Medicine Technology Division

In 2017, 35.3% of nuclear medicine technologists were located in NSW, a decrease from 38.8% in 2014. The proportion of nuclear medicine technologists located in QLD increased from 15.6% in 2014 to 19.8% in 2017.

Radiation Therapy Division

In 2017, 32.2% of radiation therapists were located in NSW, an increase from 32.1% in 2014. The proportion of radiation therapists located in QLD increased from 20.4% in 2014 to 22.7% in 2017.

Diagnostic Radiography Division

In 2017, 32.8% of diagnostic radiographers were located in NSW, an increase from 31.9% in 2014. The proportion of diagnostic radiographers located in SA decreased from 8.8% in 2014 to 8.0% in 2017.

Table 11: Distribution by state / territory, 2014 and 2017

State / Territory	Nuclear medicine technology		Radiation therapy		Diagnostic radiography	
	2014	2017	2014	2017	2014	2017
NSW	333	385	606	649	3,077	3,459
VIC	233	279	499	504	2,387	2,583
QLD	134	216	385	457	2,004	2,263
SA	67	97	133	126	848	843
WA	57	73	149	166	917	927
TAS	18	16	51	56	191	210
ACT	NP	NP	57	47	138	168
NT	NP	NP	8	10	85	80
Total	859	1,091	1,888	2,016	9,648	10,536

Note: 1. 'Not stated/Unknown' responses are excluded from the table but are included in the total.

Remoteness Area

In 2017, 96.4% of nuclear medicine technologists, 96.0% of radiation therapists and 93.6% of diagnostic radiographers were located in major cities or inner regional locations.

Table 12: Distribution by remoteness area, 2014 and 2017

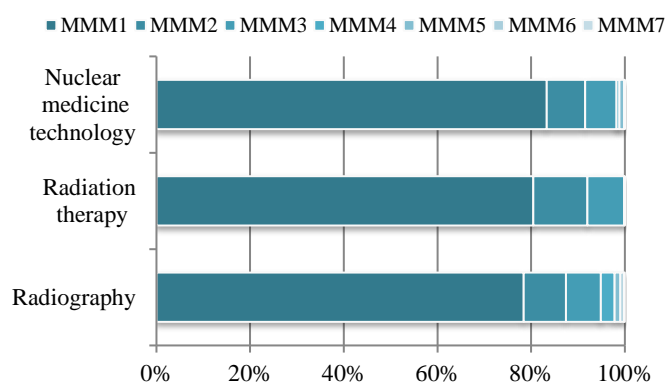
Remoteness Area	Nuclear medicine technology		Radiation therapy		Diagnostic radiography	
	2014	2017	2014	2017	2014	2017
Major cities	726	907	1,565	1,632	7,549	8,249
Inner regional	111	145	265	304	1,460	1,609
Outer regional	22	37	58	79	543	580
Remote	NP	NP	NP	NP	73	72
Very remote	NP	NP	NP	NP	23	24
Total	859	1,091	1,888	2,016	9,648	10,536

Note: 'Not stated/Unknown' are excluded from this table but are included in the total.

Modified Monash Model

In 2017, 83.3% of FTE nuclear medicine technologists, 80.4% of FTE radiation therapists, and 78.4% of FTE diagnostic radiographers were located in a major city or a location considered as MMM1 under the Modified Monash Model classification system.

Figure 13: FTE distribution by MMM location, 2017



References

- 1) National Health Workforce Dataset (NHWDS): Allied Health Practitioners 2014-2017.
- 2) ABS - 3218.0 - Regional Population Growth, Australia, 2016-17, Released 31/08/18.

Notes

- 1) 'NP' denotes figures that are not published (supressed) for confidentiality reasons
- 2) The 2013-2016 NHWDS have been revised due to an error in recoding the missing values for job role. As such the figures may not match those that were previously published.
- 3) FTE number measures the number of standard-hour workloads worked by employed health practitioners. The FTE number provides a useful measure of supply because it takes into account both the number of practitioners who are working and the hours that they work. FTE number is calculated based on the total hours worked in a 'standard working week'. The standard working week is assumed to be 38 hours, equivalent to 1 FTE for all practitioners with the exception of medical practitioners where it is assumed to be 40 hours.

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