



# 2019

## Medical Radiation Practitioners



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.

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2019

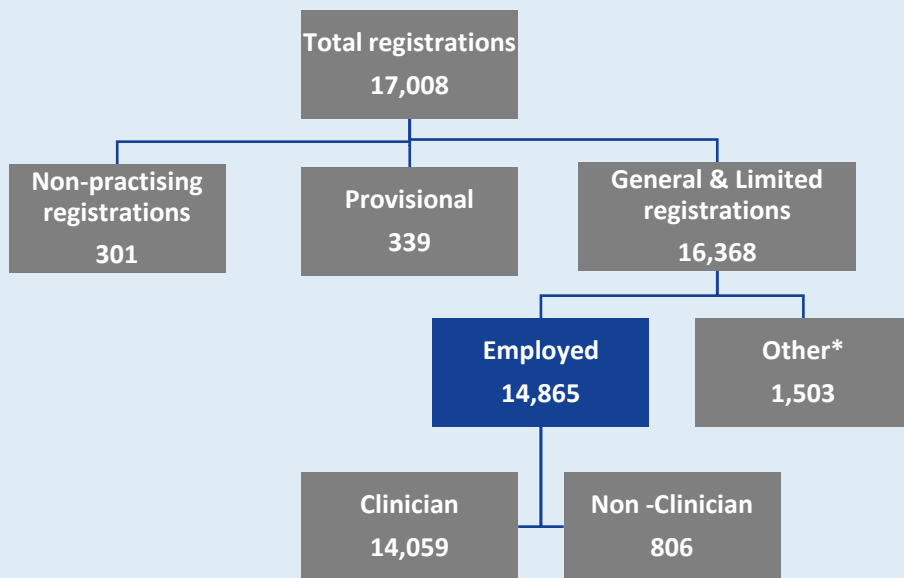
Medical Radiation  
Practitioners



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# Workforce

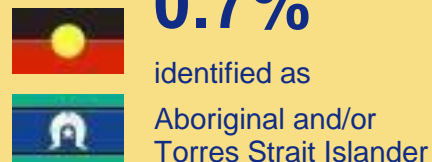
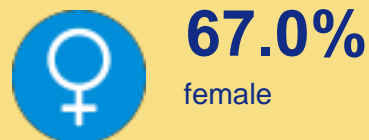
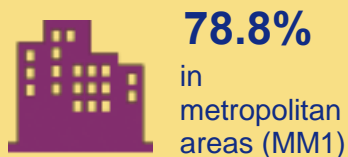
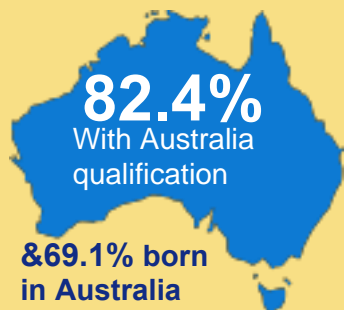
Figure 1: Medical Radiation Practitioners: Workforce status, 2019



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

## Quick Facts - 2019

Quick facts for Medical Radiation Practitioners





Between 2015 and 2019, the total number of Medical Radiation Practitioners with general or limited registration increased by 12.3% from 15,149 to 17,008 (a compound annual growth rate of 2.9%). The number of employed Medical Radiation Practitioners ('workforce') increased 15.9% from 12,830 to 14,865 over the same period (a compound annual growth rate of 3.7%).

The number of employed Medical Radiation Practitioners who worked as clinicians increased 16.2% from 12,094 to 14,059 over the same period (a compound annual growth rate of 3.8%). Clinicians are Medical Radiation Practitioners who indicated that the principal role of their main job was clinician (including managers and supervisors also providing clinical services). Non-clinicians are Medical Radiation Practitioners who indicated that the principal role of their main job was administrator (including managers not providing clinical services), teacher, educator, research or other.

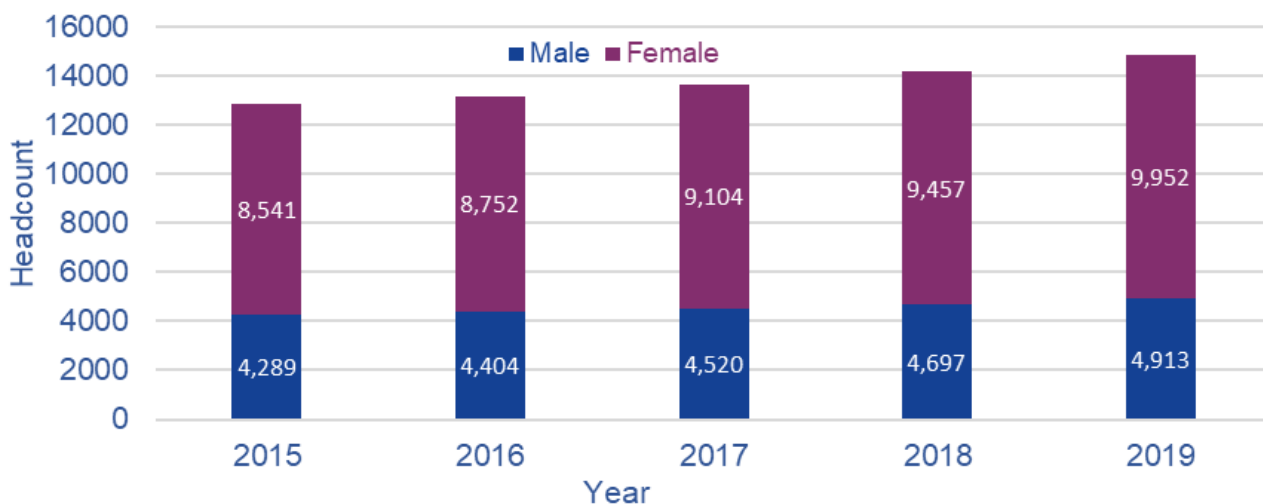
The following analysis of the Medical Radiation 'workforce' is drawn from the number of the Medical Radiation Practitioners with general registration who were employed (14,865 in 2019 as indicated by blue shading in figure 1) unless otherwise stated.

**Table 1: Medical Radiation Practitioners, 2015 – 2019**

	2015	2016	2017	2018	2019	Annual growth
Registered	15,149	15,437	15,814	16,370	17,008	2.9%
Employed	12,830	13,156	13,624	14,154	14,865	3.7%
Clinicians	12,094	12,382	12,831	13,331	14,059	3.8%

Source: NHWDS Medical Radiation Practitioners, 2015-2019

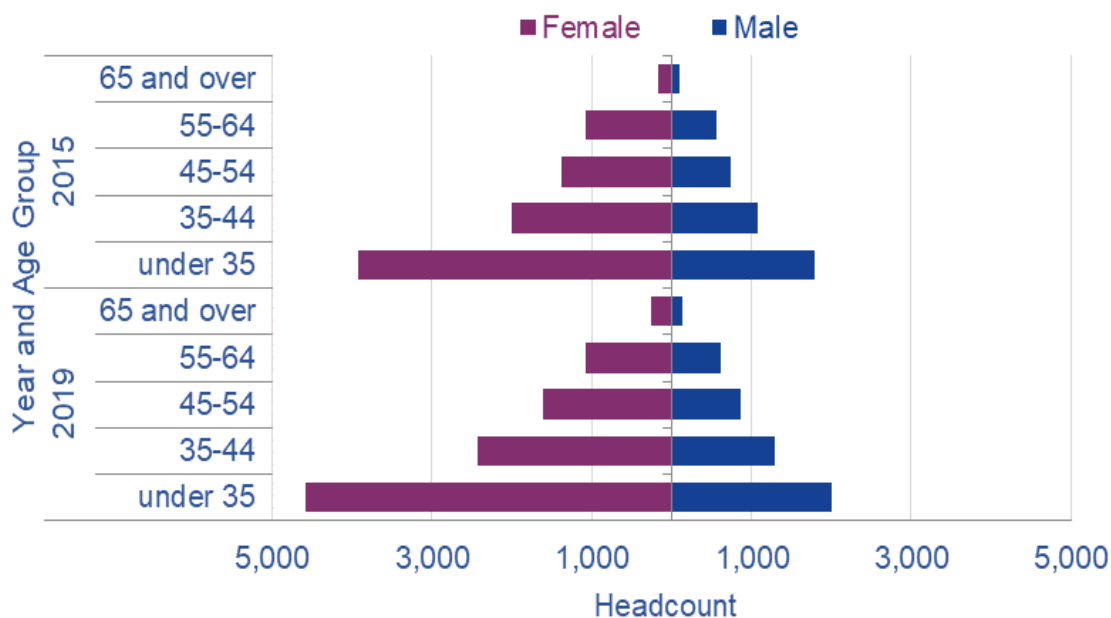
**Figure 2: Gender distribution, 2015 - 2019**



Source: NHWDS Medical Radiation Practitioners, 2015 - 2019



Figure 3: Age and gender distribution, 2015 and 2019



Source: NHWDS Medical Radiation Practitioners, 2015 and 2019

Table 2: Replacement rate, 2015 – 2019

	2015	2016	2017	2018	2019
New entrants	911	757	818	1,085	1,005
Exits	528	572	526	619	488
<b>Replacement rate</b>	<b>1.7</b>	<b>1.3</b>	<b>1.6</b>	<b>1.8</b>	<b>2.1</b>

Source: NHWDS, Medical Radiation Practitioners, 2015 - 2019

Table 3: Average hours per week, 2015 – 2019

	2015	2016	2017	2018	2019
Clinical hours*	32.8	32.4	32.5	32.6	32.7
Non-clinical hours^	2.7	2.7	2.6	2.6	2.4
<b>Total hours</b>	<b>35.5</b>	<b>35.0</b>	<b>35.1</b>	<b>35.2</b>	<b>35.1</b>

Source: NHWDS, Medical Radiation Practitioners, 2015 - 2019

Due to rounding figures may not sum to the expected total

\* Clinical hours are the reported weekly hours worked in clinical roles (including managers and supervisors also providing clinical services)

^ Non-clinical hours are the reported weekly hours worked in non-clinical roles (including teacher, researcher, administrator or other)



**Table 4: Clinical full time equivalent (FTE) by sector, 2015 and 2019**

Principal job	2015		2019	
	Clinical FTE	%	Clinical FTE	%
Private sector	5,632.6	50.9%	6,628.6	51.8%
Public sector	5,439.0	49.1%	6,179.2	48.2%
<b>Total</b>	<b>11,071.6</b>	<b>100%</b>	<b>12,807.8</b>	<b>100%</b>

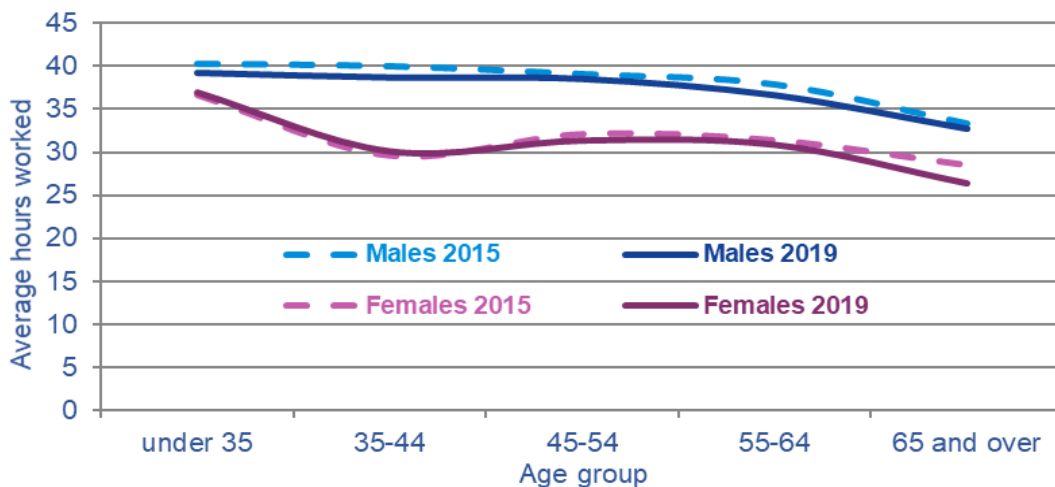
Source: NHWDS, Medical Radiation Practitioners, 2015 and 2019

Includes Medical Radiation Practitioners who reported working hours in public and / or private sectors in their clinical roles

Due to rounding figures may not sum to the expected total

Full time equivalent (FTE) based on 38 hours per week

**Figure 4: Average hours per week by gender and age group, 2015 and 2019**



Source: NHWDS Medical Radiation Practitioners, 2015 and 2019

**Table 5: Principal role, 2015 and 2019**

Principal role	2015		2019	
	Headcount	%	Headcount	%
Clinician	12,094	94.3%	14,059	94.6%
Administrator	367	2.9%	356	2.4%
Teacher or educator	203	1.6%	257	1.7%
Researcher	53	0.4%	62	0.4%
Other	113	0.9%	131	0.9%
<b>Total</b>	<b>12,830</b>	<b>100%</b>	<b>14,865</b>	<b>100%</b>

Source: NHWDS, Medical Radiation Practitioners, 2015 and 2019



**Table 6: Principal work setting, 2015 and 2019**

Principal work setting	2015		2019	
	Headcount	Avg. hours	Headcount	Avg. hours
Hospital	7,031	36.2	8,201	35.9
Group private practice	4,216	34.5	4,920	34.3
Solo private practice	724	36.3	770	34.2
Community health care service	164	29.3	207	31.8
Other private practice	192	33.6	192	35.0
Tertiary educational facility	119	37.4	167	35.5
Other government department or agency	157	32.5	141	30.2
Other	86	32.1	99	34.1
Other commercial/business service	61	39.8	74	37.1
Locum private practice	50	30.6	61	34.4
Defence forces	17	36.8	16	36.8
Other educational facility	6	32.5	8	35.5
Remaining work setting	7	36.8	9	27.5
<b>Total</b>	<b>12,830</b>	<b>35.5</b>	<b>14,865</b>	<b>35.1</b>

Source: NHWDS, Medical Radiation Practitioners, 2015 and 2019



**Table 7: Initial qualification country, 2015 – 2019**

Country	2015		2019	
	Headcount	%	Headcount	%
Australia	10,421	81.2%	12,249	82.4%
Overseas	1,905	14.8%	1,962	13.2%
Unknown / not stated	504	3.9%	654	4.4%
<b>Total</b>	<b>12,830</b>	<b>100%</b>	<b>14,865</b>	<b>100%</b>

Source: NHWDS, Medical Radiation Practitioners, 2015 and 2019

**Table 8: Years worked and years intended to remain in the workforce by principal role, 2019**

Principal role	Average years worked	Average years intended to work
Clinician	14.3	20.7
Administrator	23.0	13.3
Teacher or educator	19.4	18.1
Researcher	16.7	16.4
Other	15.4	18.6
<b>Total</b>	<b>14.6</b>	<b>20.4</b>

Source: NHWDS, Medical Radiation Practitioners, 2019



**Table 9: Distribution by State/Territory, 2019**

State/Territory	Headcount	Full time equivalent (FTE)	Average weekly hours	Population	FTE per 100,000 population
New South Wales	4,919	4,397.5	34.0	8,089,817	54.4
Victoria	3,601	3,400.7	35.9	6,596,039	51.6
Queensland	3,157	3,018.7	36.3	5,094,510	59.3
South Australia	1,174	1,042.2	33.7	1,751,963	59.5
Western Australia	1,310	1,215.7	35.3	2,621,509	46.4
Tasmania	313	287.2	34.9	534,457	53.7
Australia Capital Territory	259	244.8	35.9	426,704	57.4
Northern Territory	121	118.9	37.3	245,929	48.3
Unknown / not stated	11	11.2	39.6	-	-
<b>Australia</b>	<b>14,865</b>	<b>13,736.9</b>	<b>35.1</b>	<b>25,365,571</b>	<b>54.2</b>

Source: NHWDS, Medical Radiation Practitioners, 2019  
ABS 3218.0 - Regional Population Growth, June 2019  
Full time equivalent (FTE) based on 38 hours per week





**Table 10: Distribution by Modified Monash Model (MMM), 2019**

Modified Monash	Headcount	Full time equivalent	Average weekly hours	Population	FTE per 100,000 population
MM1 - Metropolitan	11,708	10,798.0	35.1	18,320,373	58.9
MM2 - Regional centres	1,372	1,328.5	36.8	2,245,754	59.2
MM3 - Large rural towns	1,164	1,046.8	34.2	1,587,466	65.9
MM4 - Medium rural towns	351	311.5	33.7	968,583	32.2
MM5 - Small rural towns	157	140.7	34.1	1,748,340	8.0
MM6 - Remote communities	70	69.5	37.7	281,794	24.6
MM7 - Very remote communities	33	31.6	36.3	212,587	14.8
Unknown / not stated	10	10.4	39.6	-	-
<b>Australia</b>	<b>14,865</b>	<b>13,736.9</b>	<b>35.1</b>	<b>25,365,571</b>	<b>54.2</b>

Source: NHWDS, Medical Radiation Practitioners, 2019

Full time equivalent (FTE) based on 38 hours per week

<https://www.health.gov.au/resources/publications/modified-monash-model-fact-sheet>

Modified Monash Model (MMM) 2019

ABS Estimated Resident Population (unpublished)

**Table 11: Telehealth practitioners by Modified Monash (MMM), 2019**

Modified Monash Model	Percentage
MM1 - Metropolitan	72.8%
MM2 - Regional centres	7.0%
MM3 - Large rural towns	10.2%
MM4 - Medium rural towns	4.9%
MM5 - Small rural towns	2.9%
MM6 - Remote communities	1.0%
MM7 - Very remote communities	0.8%

Source: NHWDS, Medical Radiation Practitioners, 2019

MMM breakdown for tele-health refers to the location of the Medical Radiation Practitioners not the location of the person receiving the service

<https://www.health.gov.au/resources/publications/modified-monash-model-fact-sheet>

Modified Monash Model (MMM) 2019



## 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 2019, there were 17 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 or limited registration in the specified division who were employed (1,034 nuclear medicine technologists, 2,187 radiation therapists and 11,661 diagnostic radiographers in 2019) unless otherwise stated.

## Nuclear Medicine Technology Division

Between 2015 and 2019, the total number of Nuclear Medicine Technologists with general registration increased by 11.1% from 1,104 to 1,227 (a compound annual growth rate of 2.7%). The number of employed Nuclear Medicine Technologists ('workforce') increased 15.9% from 892 to 1,034 over the same period (a compound annual growth rate of 3.8%).

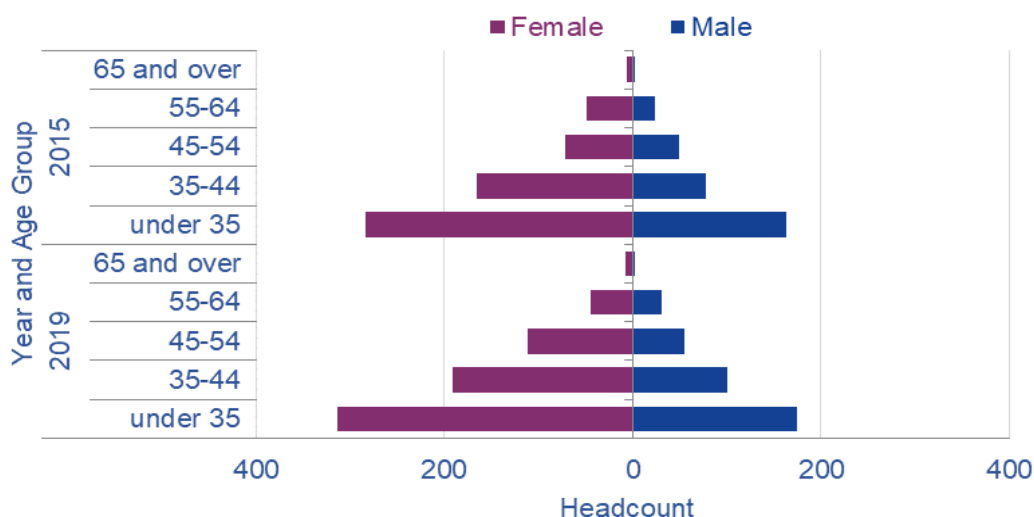
**Table 12: Nuclear Medicine Technologists, 2015 – 2019**

	2015	2016	2017*	2018	2019	Annual growth
Registered	1,104	1,142	1,198	1,195	1,227	2.7%
Employed	892	941	952	974	1,034	3.8%
Clinicians	842	894	896	915	970	3.6%

Source: NHWDS, Medical Radiation Practitioners, 2015 - 2019

\*The number of Nuclear Medicine Technologists in 2017 has been revised due to an error with the Ahpra registration data

**Figure 5: Nuclear Medicine Technologists - age and gender distribution, 2015 and 2019**



Source: NHWDS Medical Radiation Practitioners, 2015 and 2019



### Diagnostic Radiography Division

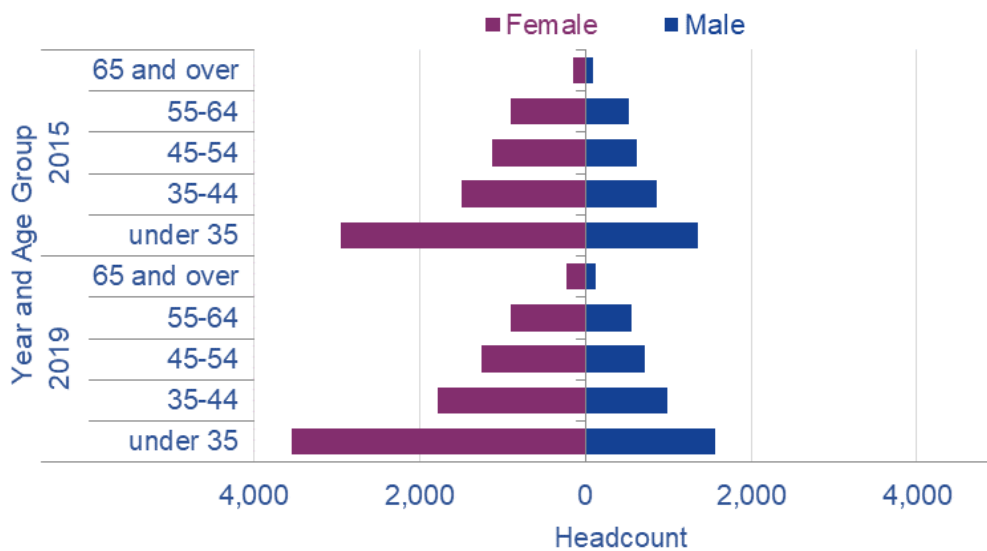
Between 2015 and 2019, the total number of Diagnostic Radiographers with general or limited registration increased by 13.2% from 11,736 to 13,291 (a compound annual growth rate of 3.2%). The number of employed Diagnostic Radiographers ('workforce') increased 15.9% from 10,058 to 11,661 over the same period (a compound annual growth rate of 3.8%).

**Table 13: Diagnostic Radiographers, 2015 – 2019**

	2015	2016	2017	2018	2019	Annual growth
Registered	11,736	11,962	11,980	12,745	13,291	3.2%
Employed	10,058	10,280	10,536	11,136	11,661	3.8%
Clinicians	9,527	9,736	9,972	10,554	11,081	3.8%

Source: NHWDS Medical Radiation Practitioners, 2015-2019

**Figure 6: Diagnostic Radiographers - age and gender distribution, 2015 and 2019**



Source: NHWDS Medical Radiation Practitioners, 2015 and 2019



## Radiation Therapy Division

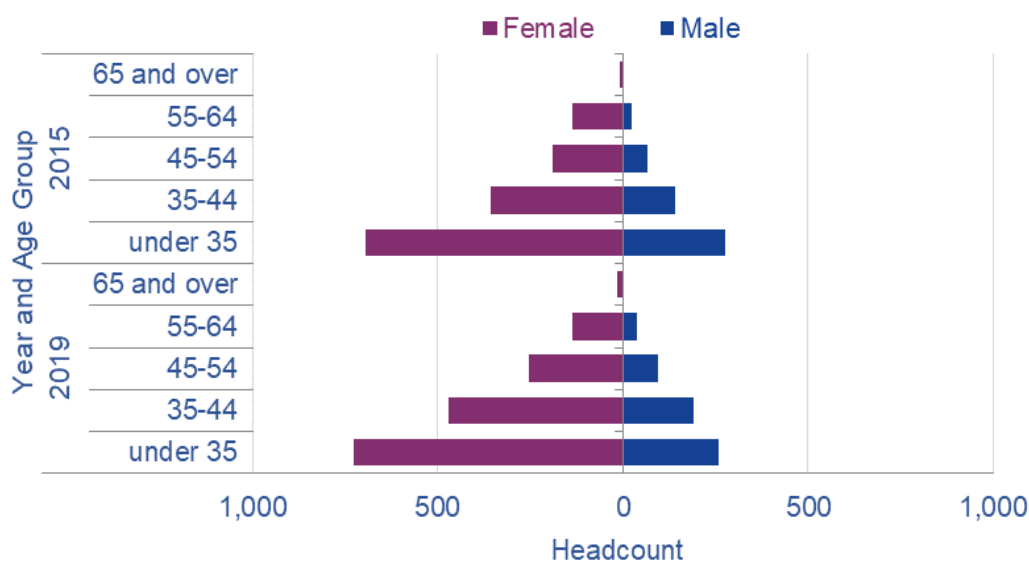
Between 2015 and 2019, the total number of Radiation Therapists with general registration increased by 7.9% from 2,325 to 2,508 (a compound annual growth rate of 1.9%). The number of employed Radiation Therapists ('workforce') increased 15.4% from 1,895 to 2,187 over the same period (a compound annual growth rate of 3.6%).

**Table 14: Radiation Therapists, 2015 – 2019**

	2015	2016	2017	2018	2019	Annual growth
Registered	2,325	2,350	2,354	2,447	2,508	1.9%
Employed	1,895	1,952	2,016	2,061	2,187	3.6%
Clinicians	1,739	1,767	1,846	1,877	2,023	3.9%

Source: NHWDS, Medical Radiation Practitioners, 2015 - 2019

**Figure 7: Radiation Therapists - age and gender distribution, 2015 and 2019**



Source: NHWDS Medical Radiation Practitioners, 2015 and 2019



## Distribution by divisions of practice

Table 15: Distribution by State/Territory, 2015 – 2019

State/Territory	Nuclear Medicine Technology		Radiation Therapy		Diagnostic Radiography	
	2015	2019	2015	2019	2015	2019
New South Wales	333	378	601	695	3,263	3,848
Victoria	251	280	500	538	2,467	2,785
Queensland	143	171	394	498	2,071	2,496
South Australia	70	85	129	142	845	948
Western Australia	57	72	154	185	966	1,056
Tasmania	16	18	51	64	209	232
Australia Capital Territory	20	25	55	53	149	181
Northern Territory	NP	4	10	10	83	107
unknown / not stated	NP	1	1	2	5	8
<b>Australia</b>	<b>892</b>	<b>1,034</b>	<b>1,895</b>	<b>2,187</b>	<b>10,058</b>	<b>11,661</b>

Source: NHWDS, Medical Radiation Practitioners, 2015 and 2019

'NP' denotes figure that are not published (suppressed) for confidentiality purposes

Table 16: Distribution by State/Territory, 2015 – 2019

State/Territory	Nuclear Medicine Technology		Radiation Therapy		Diagnostic Radiography	
	2015	2019	2015	2019	2015	2019
MM1 - Metropolitan	757	866	1,553	1,763	7,848	9,090
MM2 - Regional centres	71	86	209	242	885	1,047
MM3 - Large rural towns	51	65	125	170	772	931
MM4 - Medium rural towns	8	7	NP	NP	298	343
MM5 - Small rural towns	5	NP	NP	NP	150	141
MM6 - Remote communities	-	NP	-	-	72	69
MM7 - Very remote communities	-	-	-	-	29	33
unknown / not stated	-	NP	NP	NP	4	7
<b>Australia</b>	<b>892</b>	<b>1,034</b>	<b>1,895</b>	<b>2,187</b>	<b>10,058</b>	<b>11,661</b>

Source: NHWDS, Medical Radiation Practitioners, 2015 and 2019

'NP' denotes figure that are not published (suppressed) for confidentiality purposes

<https://www.health.gov.au/resources/publications/modified-monash-model-fact-sheet>

Modified Monash Model (MMM) 2019



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## References

- 1) National Health Workforce Dataset (NHWDS) Medical Radiation Practitioners 2015-2019 (<http://hwd.health.gov.au>)
- 2) ABS 3218.0 - Regional Population Growth, June 2019
- 3) ABS Estimated Resident Population (unpublished)