



AUSTRALASIAN COLLEGE  
FOR EMERGENCY MEDICINE

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# EMERGENCY MEDICINE WORKFORCE

## SPECIALIST EMERGENCY MEDICINE WORKFORCE AND TRAINING ACTIVITIES 2016

### Preliminary Findings

March 2017

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## 1 PURPOSE AND SCOPE OF REPORT

The purpose of this report is to describe the specialist emergency medicine workforce and training activities of Fellows (FACEMs) and trainees of the Australasian College for Emergency Medicine (ACEM) in 2016. Information from the ACEM members database was sourced and analysis was conducted by the ACEM Research Unit, Policy and Research Department. This report applies to all FACEMs, and advanced and provisional trainees of the College. The data presented in this report will help to inform planning and policy initiatives relating to the emergency medicine workforce and ACEM training activities.

## 2 METHODOLOGY

Data relating to FACEMs and advanced and provisional trainees was extracted from the ACEM members database. This data included:

- Demographic data
- FACEM workplace and trainee placement data, including location, roles and working hours
- FACEM and trainee progression data, including intake and attrition
- Primary and Fellowship examination data

There was a large amount of missing data relating to FACEM workplace details, mostly for newly elected FACEMs. FACEMs living in Australia and New Zealand who had missing workplace details were contacted to provide an update.

For the purposes of this report, data was analysed and presented as at 31 December, 2016 to allow for comparisons over a ten year period from 2007 to 2016. The historical data was drawn from equivalent reports (Australasian College for Emergency Medicine, 2015; Australasian College for Emergency Medicine, 2016; Gosbell, 2012), which presented a snapshot of the members data as at the end of 2015, 2014 and 2011.

Where data has been presented by region, the classification differs for demographic data and FACEM workforce and trainee placement analysis. The demographic data analysis uses residential/ mailing address to classify the 'region', whereas for the FACEM workforce and trainee placement analysis 'region' is reflective of workplace location (i.e. state or country). The metropolitan or regional/ rural location was determined for FACEMs' workplaces and ACEM advanced trainees' training placement workplaces and excludes those working as locum or in pre-hospital/ retrieval medicine roles not linked to a hospital. For Australian sites, the location was based on the Australian Standard Geographical Classification - Remoteness Area (ASGC-RA 2006) (Australian Bureau of Statistics, 2014), with New Zealand sites classified as metropolitan if they were located in Auckland, Christchurch or Wellington, with all other sites classified as regional.

### 3 RESULTS

#### 3.1 FACEMs

##### 3.1.1 Demographic characteristics of FACEMs

In 2016, there was a total of 2252 FACEMS; 1929 FACEMs working in Australia, 35% of who were female; and 259 FACEMS working in New Zealand, 40% of who were female. A further 64 FACEMs were working outside of Australia and New Zealand. The distribution of all FACEMs by region and gender is presented in Table 1.

Table 1. Distribution of all FACEMs by region and gender

Region	Female	Male	Total		% Female
	N	N	N	%	
<b>Australia</b>	<b>659</b>	<b>1270</b>	<b>1929</b>	<b>85.7%</b>	<b>34.2%</b>
ACT	8	30	38	1.7%	21.1%
NSW	182	328	510	22.6%	35.7%
NT	13	13	26	1.2%	50.0%
QLD	147	311	458	20.3%	32.1%
SA	39	78	117	5.2%	33.3%
TAS	16	30	46	2.0%	34.8%
VIC	178	330	508	22.6%	35.0%
WA	76	150	226	10.0%	33.6%
<b>New Zealand</b>	<b>104</b>	<b>155</b>	<b>259</b>	<b>11.5%</b>	<b>40.2%</b>
Overseas	20	44	64	2.8%	31.3%
<b>Total</b>	<b>783</b>	<b>1469</b>	<b>2252</b>	<b>100.0%</b>	<b>34.8%</b>

Table 2 presents the distribution of all FACEMs by age group, region and gender, with the majority, 68% (1539/2252) of FACEMs aged between 35 and 49 years. Fourteen percent of FACEMs in Australia (275/1929) and 13% in New Zealand (34/259) were aged 55 years or older.

Table 2. Active FACEMs by age group, region and gender

Region	<35 years			35-39 years			40-44 years			45-49 years			50-54 years			55-59 years			60+ years			Total
	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total	
<b>Australia</b>	<b>47</b>	<b>39</b>	<b>86</b>	<b>175</b>	<b>227</b>	<b>402</b>	<b>183</b>	<b>288</b>	<b>471</b>	<b>140</b>	<b>309</b>	<b>449</b>	<b>70</b>	<b>176</b>	<b>246</b>	<b>32</b>	<b>146</b>	<b>178</b>	<b>12</b>	<b>85</b>	<b>97</b>	<b>1929</b>
ACT				1	7	8	2	6	8	4	9	13		3	3	1	4	5		1	1	38
NSW	11	13	24	51	48	99	39	75	114	46	81	127	21	35	56	11	51	62	3	25	28	510
NT				3	2	5	6	5	11	1	2	3	3	2	5					2	2	26
QLD	16	13	29	46	69	115	47	63	110	22	70	92	7	43	50	8	31	39	1	22	23	458
SA	1		1	6	15	21	11	20	31	8	21	29	9	9	18	2	9	11	2	4	6	117
TAS				2	5	7	7	6	13	3	7	10	2	5	7		4	4	2	3	5	46
VIC	10	8	18	47	56	103	46	74	120	43	82	125	22	58	80	6	33	39	4	19	23	508
WA	9	5	14	19	25	44	25	39	64	13	37	50	6	21	27	4	14	18		9	9	226
<b>New Zealand</b>	<b>5</b>	<b>2</b>	<b>7</b>	<b>25</b>	<b>25</b>	<b>50</b>	<b>32</b>	<b>28</b>	<b>60</b>	<b>24</b>	<b>49</b>	<b>73</b>	<b>10</b>	<b>25</b>	<b>35</b>	<b>5</b>	<b>14</b>	<b>19</b>	<b>3</b>	<b>12</b>	<b>15</b>	<b>259</b>
Overseas	2		2	4	2	6	5	11	16	3	9	12	5	11	16	1	5	6		6	6	64
<b>Total</b>	<b>54</b>	<b>41</b>	<b>95</b>	<b>204</b>	<b>254</b>	<b>458</b>	<b>220</b>	<b>327</b>	<b>547</b>	<b>167</b>	<b>367</b>	<b>534</b>	<b>85</b>	<b>212</b>	<b>297</b>	<b>38</b>	<b>165</b>	<b>203</b>	<b>15</b>	<b>103</b>	<b>118</b>	<b>2252</b>

As displayed in Table 3, the average age of FACEMs was 46 years; female FACEMs were, on average, younger than male FACEMs in both Australia and New Zealand.

Table 3. Average age of FACEMs by country and gender (N=2252)

Region	Average of age		
	Female	Male	All
Australia	43.2	46.6	45.4
New Zealand	43.7	47.2	45.8
Overseas	44.2	49.6	47.9
<b>All</b>	<b>43.3</b>	<b>46.8</b>	<b>45.6</b>

Figures 1 and 2 show the distribution of FACEMs by age group and gender in Australia and New Zealand, respectively.

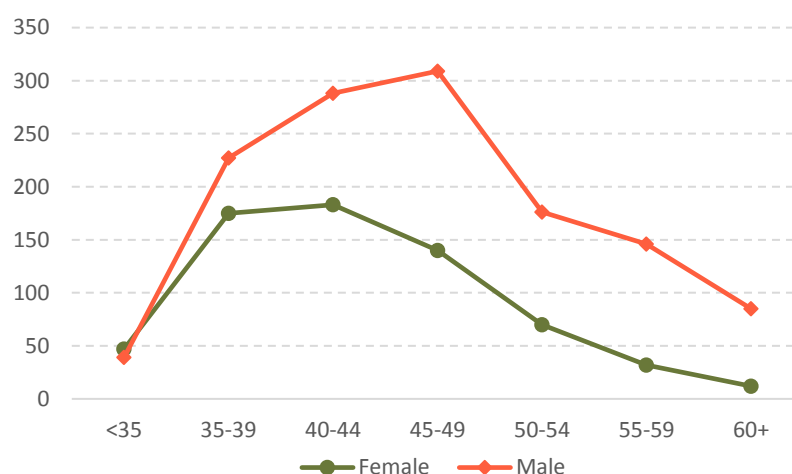


Figure 1. FACEMs in Australia, by age group and gender (n=1929)

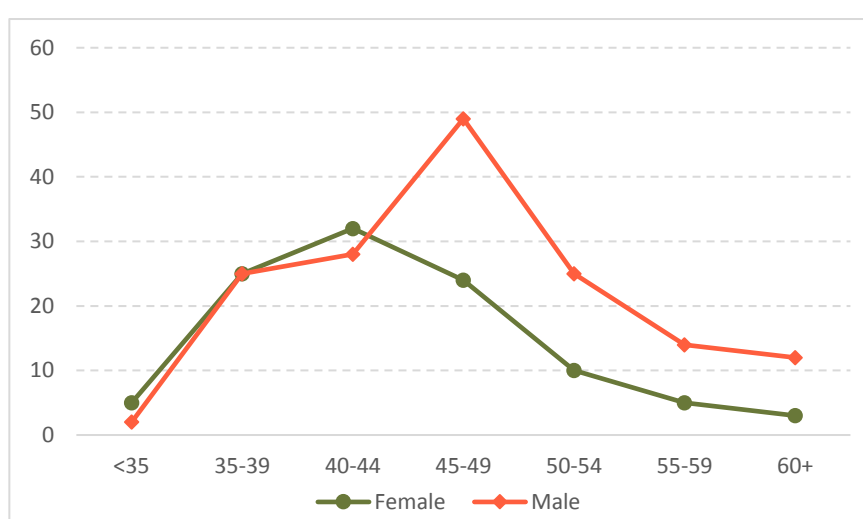


Figure 2. FACEMs in New Zealand, by age group and gender (n=259)

Table 4 presents the number of FACEMs who self-identified as Aboriginal or Māori as recorded in their ACEM member profile, by region. No FACEMs identified as Torres Strait Islander.

Table 4. Number of FACEMs who self-identified as Indigenous, by region

Region	Aboriginal		Torres Strait Islander		Maori	
	N	%*	N	%	N	%*
Australia	2	0.10%	-	-	-	-
New Zealand	-	-	-	-	2	0.80%
<b>Total</b>	<b>2</b>	<b>0.09%</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>0.09%</b>

\*Percent of all FACEMs

### 3.1.2 New FACEMs

In 2016, 181 candidates were elected to Fellowship, 91% (n=164) completed the ACEM Training Program pathway, the remainder in this cohort (n=17) were elected to Fellowship following recognition of overseas specialist qualifications (as specialist international medical graduates). Table 5 presents the 2016 new FACEMs by region, training pathway and gender.

Table 5. New FACEMs in 2016 by region, training pathway and gender

	Training			Recognition as SIMG			Total
	Female	Male	Total	Female	Male	Total	
<b>Australia</b>	<b>69</b>	<b>78</b>	<b>147</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>153</b>
ACT	1	2	3				3
NSW	26	23	49		2	2	51
NT	1		1				1
QLD	14	18	32		1	1	33
SA	2	3	5				5
TAS		2	2				2
VIC	19	21	40		2	2	42
WA	6	9	15	1		1	16
<b>New Zealand</b>	<b>10</b>	<b>6</b>	<b>16</b>	<b>3</b>	<b>6</b>	<b>9</b>	<b>25</b>
Overseas	1		1	2		2	3
<b>Total</b>	<b>80</b>	<b>84</b>	<b>164</b>	<b>6</b>	<b>11</b>	<b>17</b>	<b>181</b>

SIMG=Specialist International Medical Graduate



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### **3.1.3 Workplace details of FACEMs**

This section presents the workplace details of FACEMs working in Australia and New Zealand. Of the total number of FACEMs working in Australia and New Zealand (N=2188), workplace details were available for 2115 FACEMs, 1875 working in Australia (3% missing data) and 240 working in New Zealand (7% missing data). Five FACEMs working in Australia were working solely as locums with no specific workplace details and are excluded from further analysis.

#### **3.1.3.1 Overall workplace profile**

The percentage of FACEMs working at one site only was 67% (n=1417), 25% (n=516) were working at two sites and 8% (n=177) were working across three or more sites.

The percentage of FACEMs working in a hospital setting at one or more workplaces was 99% in both Australia (n=1844) and New Zealand (n=237). Of the FACEMs working at a hospital, 93% were working in an emergency department (ED), 1726 in Australia and 217 in New Zealand, and 97% in the public sector.

The majority (76%) of FACEMs working in a hospital were located in metropolitan areas only of Australia (n=1433) and New Zealand (n=140), 19% were working in regional localities only (302 in Australia; 94 in New Zealand) and 5% were working in both metropolitan and regional areas across two or more workplaces.

A total of 61% (1257/2054) FACEMs were working full-time at their primary workplace; 59% of FACEMs in Australia and 78% of FACEMs in New Zealand. This includes FACEMs working part-time hours that total 38 hours per week or more, at one or more linked hospitals. Linked hospitals are classified as hospitals that are located within the same Local Health Network/ District.

A workplace summary of FACEMs in Australia and New Zealand is presented in Table 6.

Table 6. Workplace summary of FACEMs working at one or more workplaces in Australia and New Zealand (N=2110)

	Australia		New Zealand		Total	
	N	%	N	%	N	%
<b>Number with workplace details</b>	<b>1870</b>		<b>240</b>		<b>2110</b>	
<b>Number of workplaces</b>						
One	1218	65.1%	199	82.9%	1417	67.2%
Two	478	25.6%	38	15.8%	516	24.4%
Three or more	174	9.3%	3	1.3%	177	8.4%
<b>Workplace setting</b>						
Hospital only	1734	92.7%	233	97.1%	1967	93.2%
Non-Hospital only	26	1.4%	3	1.2%	29	1.4%
Both hospital & non-hospital	110	5.9%	4	1.7%	114	5.4%
<b>Working in a hospital at one or more workplaces (n=2081)</b>	<b>1844</b>		<b>237</b>			
Working in an ED across workplaces	1726	93.6%	217	91.6%	1942	93.4%
Working in a public hospital across workplaces	1773	96.1%	236	99.6%	2008	96.5%
Metropolitan location only	1433	77.8%	140	59.1%	1573	75.6%
Regional location only	302	16.4%	94	39.7%	395	19.0%
Both metropolitan & regional locations	109	5.9%	3	1.3%	112	5.4%
<b>Working full-time in primary workplace*</b>	<b>1077</b>	<b>59.1%</b>	<b>180</b>	<b>77.9%</b>	<b>1257</b>	<b>61.2%</b>

\*Includes FACEMs working part-time at two or more linked hospitals for a total of 38 hours per week or more, and excludes 56 FACEMs with unknown employment status

ED=emergency department

Table 7 presents the working time arrangements, by gender and age group for FACEMs working in Australia and New Zealand. For FACEMs working at more than one workplace, the total number of hours was calculated and those working 38 hours or more per week were classified as full-time. The remainder working less than 38 hours per week were classified as part-time.

Table 7. Employment status of FACEMs in Australia and New Zealand, by gender and age group

Age group	Female					Male					Total
	Full-time		Part-time		Total	Full-time		Part-time		Total	
	N	%	N	%	N	N	%	N	%	N	
<35 years	27	3.9%	13	1.9%	40	23	1.7%	7	0.5%	30	70
35-39 years	105	15.1%	71	10.2%	176	178	13.3%	46	3.4%	224	400
40-44 years	114	16.4%	84	12.1%	198	242	18.1%	58	4.3%	299	498
45-49 years	94	13.5%	61	8.8%	155	283	21.1%	59	4.4%	342	497
50-54 years	8	1.2%	6	0.9%	14	67	5.0%	21	1.6%	88	102
55-59 years	48	6.9%	29	4.2%	77	165	12.3%	34	2.5%	199	276
60+ years	24	3.5%	11	1.6%	35	127	9.5%	29	2.2%	156	191
<b>Total</b>	<b>420</b>	<b>60.4%</b>	<b>275</b>	<b>39.6%</b>	<b>695</b>	<b>1085</b>	<b>81.0%</b>	<b>254</b>	<b>19.0%</b>	<b>1339</b>	<b>2034</b>

NB: Excludes 76 FACEMs with unknown total hours per week

Data on hours worked per week was available for 2034 FACEMs, with 74% (n=1505) working the equivalent of full-time hours (i.e. 38 hours or more per week) across one or more workplace; 1318 FACEMs in Australia and 187 FACEMs in New Zealand. Of those, 90% (n=1356) were working full-time across one or more ED. Table 8 presents the number and percentage of FACEMs working full-time across one or more ED, by region.

Table 8. FACEMs working full-time across one or more ED by region

Region	N	%
<b>Australia</b>	<b>1180</b>	<b>65.4%</b>
ACT	10	52.6%
NSW	322	63.6%
NT	30	78.9%
QLD	297	68.9%
SA	76	67.3%
TAS	15	40.5%
VIC	295	65.7%
WA	135	64.3%
<b>New Zealand</b>	<b>176</b>	<b>76.5%</b>
<b>Total</b>	<b>1356</b>	<b>66.7%</b>

NB: For FACEMs working across more than one region, primary workplace region used

Of the FACEMs working full-time across one or more ED, 71% (n=1027) worked in EDs located in metropolitan areas only, 23% (n=258) worked in regional or rural areas only, and 6% (n=71) worked in EDs across metropolitan and regional areas (Table 9).

Table 9. FACEMs working full-time across one or more ED, by location of ED (n=1356)

Location	N	%
Metropolitan only	1027	70.8%
Regional or rural only	258	23.1%
Both metropolitan and regional/ rural	71	6.1%

### 3.1.3.2 Primary workplace profile

A total of 85% (n=1797) of FACEMs were working as emergency physicians in an ED at their primary workplace. In Australia, 91% (n=1701), and in New Zealand, 98% (n=234) of FACEMs' primary workplace was in the public sector. Table 10 displays workplace sector and speciality role for the primary workplace of Australian and New Zealand FACEMs.

Table 10. Primary speciality role of FACEMs working in Australia and New Zealand, by sector and region

Region	Public Hospital					Private Hospital					Non-Hospital					Total
	ED		Other		Total	ED		Other		Total	Pre-hospital/ retrieval		Other		Total	
	N	%	N	%	N	N	%	N	%	N	N	%	N	%	N	
<b>Australia</b>	<b>1582</b>	<b>75.1%</b>	<b>119</b>	<b>5.6%</b>	<b>1701</b>	<b>87</b>	<b>4.1%</b>	<b>8</b>	<b>0.4%</b>	<b>95</b>	<b>24</b>	<b>1.1%</b>	<b>48</b>	<b>2.3%</b>	<b>72</b>	<b>1868</b>
ACT	13	0.6%	3	0.1%	16						2	0.1%	1	0.0%	3	19
NSW	469	22.3%	19	0.9%	488	3	0.1%	1	0.0%	4	3	0.1%	18	0.9%	21	513
NT	37	1.8%			37						1	0.0%			1	38
QLD	368	17.5%	30	1.4%	398	29	1.4%	4	0.2%	33	9	0.4%	9	0.4%	18	449
SA	100	4.7%	8	0.4%	108	5	0.2%			5			4	0.2%	4	117
TAS	32	1.5%	6	0.3%	38	1	0.0%			1						39
VIC	384	18.2%	32	1.5%	416	43	2.0%	2	0.1%	45	6	0.3%	9	0.4%	15	476
WA	179	8.5%	21	1.0%	200	6	0.3%	1	0.0%	7	3	0.1%	7	0.3%	10	217
<b>New Zealand</b>	<b>215</b>	<b>10.2%</b>	<b>19</b>	<b>0.9%</b>	<b>234</b>	<b>1</b>	<b>0.0%</b>			<b>1</b>	<b>4</b>	<b>0.2%</b>			<b>4</b>	<b>239</b>
<b>Total</b>	<b>1797</b>	<b>85.3%</b>	<b>138</b>	<b>6.5%</b>	<b>1935</b>	<b>88</b>	<b>4.2%</b>	<b>8</b>	<b>0.4%</b>	<b>96</b>	<b>28</b>	<b>1.3%</b>	<b>48</b>	<b>2.3%</b>	<b>76</b>	<b>2107</b>

ED=emergency department; Other Hospital: e.g. ICU/ anaesthetics/ administration; Other Non-Hospital: e.g. research/ academia

NB: Excludes three FACEMs with no speciality role specified

Only 18% (n=329) of FACEMs in Australia and 40% (n=96) in New Zealand were working in regional/rural locations at their primary workplace. The breakdown of location of primary workplace by region is presented in Table 11 and Figure 3.

Table 11. Primary workplace location of FACEMs working in Australia and New Zealand by region

Region	Total	Metropolitan	Regional or Rural	% Regional or Rural
<b>Australia</b>	<b>1835</b>	<b>1506</b>	<b>329</b>	<b>17.9%</b>
ACT	18	18		0.0%
NSW	506	428	78	15.4%
NT	38		38	100.0%
QLD	442	334	108	24.4%
SA	113	111	2	1.8%
TAS	39		39	100.0%
VIC	468	434	34	7.3%
WA	211	181	30	14.2%
<b>New Zealand</b>	<b>240</b>	<b>144</b>	<b>96</b>	<b>40.0%</b>
<b>Total</b>	<b>2075</b>	<b>1650</b>	<b>425</b>	<b>20.5%</b>

NB: Excludes 35 FACEMs working in non-ambulance retrieval medicine

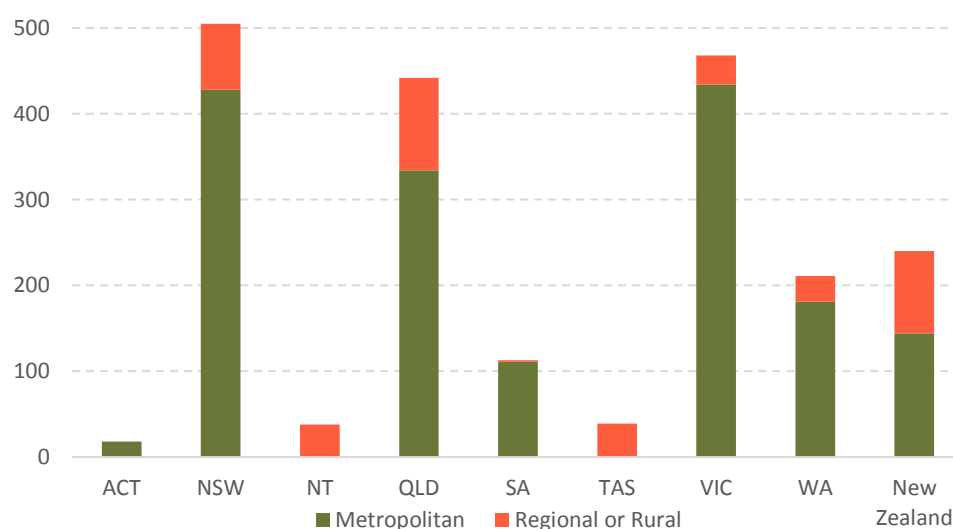


Figure 3: Distribution of FACEM's primary workplace, by location and region (n=2075)

### 3.1.4 FACEM trends

Over the period 2007 to 2016, there was an average of 138 new FACEMs per annum; 116 per annum in Australia and 18 per annum in New Zealand. For this same period, average attrition from the speciality was 6.7 FACEMs per annum overall; 4.0 in Australia and 0.9 per annum in New Zealand. Figure 4 shows the annual number of FACEMs in Australia and New Zealand for the period 2007 to 2016.

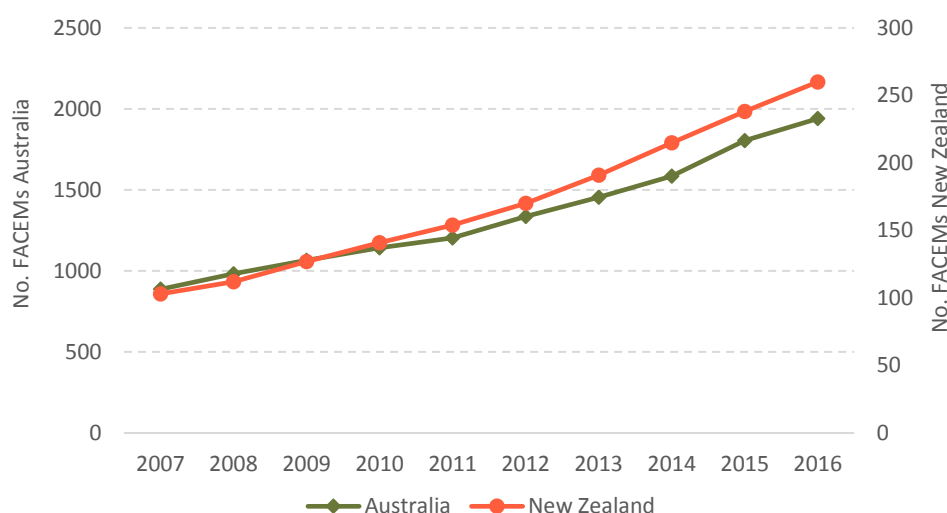


Figure 4. Annual number of FACEMs in Australia and New Zealand 2007-2016

The percentage of FACEMs who attained Fellowship by completing the FACEM Training Program was 86% for the period 2007 to 2016. In Australia, 8% of new FACEMs were elected following recognition of overseas specialist qualifications over the period 2007 to 2016, and in New Zealand this proportion was higher at 28%. A decrease was seen in the number of new FACEMs elected following recognition of overseas specialist qualifications between 2013 and 2016. The proportion of new FACEMs completing the training pathway who obtained their primary medical degree overseas, referred to as international medical graduates (IMG), averaged 51% between 2012 and 2016. Table 12 presents a summary of trends relating to demographic characteristic of FACEMs, intake and attrition for the period 2007 to 2016.

Table 12. FACEM trends for the period 2007-2016

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	% change 2015-2016
<b>Total no.</b>	1024	1134	1242	1335	1413	1563	1705	1859	2101	2252	7.2%
% Female	-	-	-	-	29.6%	30.9%	31.9%	33.1%	33.6%	34.8%	3.6%
Average age	-	-	-	-	44.7	45.5	45.7	46.3	45.4	45.6	0.4%
<b>No. new FACEMs</b>	90	112	110	95	96	152	144	164	249	181	-27.3%
% Female	35.6%	38.4%	35.5%	44.2%	31.3%	45.4%	39.6%	45.7%	35.7%	47.5%	33.1%
% IMG	-	-	-	-	50.5%	58.0%	50.0%	45.9%	54.5%	47.6%	-12.7%
Average age at election	-	-	-	-	36.6	37.4	37.6	37.4	37.5	37.6	2.7%
% SIMG pathway	12.2%	8.9%	11.8%	22.1%	9.4%	14.5%	23.6%	17.7%	10.8%	9.4%	-13.0%
<b>No. withdrawals/ retirees</b>	3	2	2	2	7	2	2	10	7	30	328.6%

IMG=International Medical Graduate; SIMG=Specialist International Medical Graduate

NB: Prior to 2012, there was substantial missing demographic and training related data for members, and issues with the reliability of some of the existing data and with the database

Over the period 2007 to 2016, it took new FACEMs who came through the ACEM training program pathway an average of 88 months from ACEM registration, and 66 months from commencing advanced training to complete all training requirements and be elected to Fellowship (Table 13).

Table 13. Time (months) to achieve Fellowship for new FACEMs, 2007-2016

Year	N	Registration to Election			Advanced training start to Election		
		Average	Min	Max	Average	Min	Max
2007	79	89.3	30	170	59.6	30	88
2008	102	87.1	23	152	63	48	96
2009	97	87.9	54	164	63.9	43	103
2010	74	88.3	58	173	67.3	46	115
2011	87	83.8	32	162	66.7	46	132
2012	130	88.7	23	224	67.7	23	143
2013	110	88.4	56	200	67.4	44	130
2014	135	89.0	30	291	68.0	30	266
2015	222	89.5	20	222	68.4	18	156
2016	164	92.1	59	223	67.9	49	153
<b>Total</b>	<b>1200</b>	<b>88.4</b>	<b>20</b>	<b>291</b>	<b>66.0</b>	<b>18</b>	<b>266</b>

Between 2007 and 2016, there has been a general increase in the average time to complete advanced training. Training duration was, on average, four months longer for females compared to males, however in 2016 this difference was less; females took two months longer on average to complete advanced training. The average length of time to achieve Fellowship from ACEM registration and from commencement of advanced training, by gender is presented in Table 14.

Table 14. Average time (months) to achieve Fellowship for new FACEMs by gender, 2007-2016

Year	ACEM registration to election			Advanced training commencement to election		
	Female	Male	Total	Female	Male	Total
2007	95.5	85.5	89.3	66.6	56.1	59.6
2008	89.8	85.5	87.1	66.3	60.7	63.0
2009	82.9	91.0	87.9	62.6	64.8	63.9
2010	88.7	87.9	88.3	67.2	67.3	67.3
2011	85.3	83.2	83.8	68.1	66.0	66.7
2012	88.5	89.0	88.7	69.1	66.4	67.7
2013	92.0	85.4	88.4	72.6	63.1	67.4
2014	93.2	85.1	89.0	70.4	65.8	68.0
2015	95.6	86.0	89.5	72.8	65.9	68.4
2016	92.7	91.6	92.1	69.0	66.8	67.9
<b>Total</b>	<b>90.4</b>	<b>87.0</b>	<b>88.4</b>	<b>68.5</b>	<b>64.3</b>	<b>66.0</b>

## 3.2 ACEM trainees

### 3.2.1 Demographic characteristics of ACEM trainees

There were 1663 advanced trainees and 687 provisional trainees enrolled in the ACEM Training Program at the end of 2016. Of the advanced trainees, 46% (n=761) were female, and of the provisional trainees, 50% (n=340) were female. The number of ACEM trainees, by region and gender is presented in Table 15.

Table 15. ACEM trainees by region and gender

Region	Advanced Trainees			Provisional Trainees			Total		% Female
	Female	Male	Total	Female	Male	Total	N	%	
<b>Australia</b>	<b>672</b>	<b>822</b>	<b>1494</b>	<b>305</b>	<b>309</b>	<b>614</b>	<b>2108</b>	<b>89.8%</b>	<b>46.3%</b>
ACT	8	12	20	8	4	12	32	1.4%	50.0%
NSW	190	245	435	116	88	204	639	27.2%	47.9%
NT	21	14	35	3	9	12	47	2.0%	51.1%
QLD	177	189	366	69	93	162	529	22.5%	46.6%
SA	37	55	92	9	19	28	120	5.1%	38.3%
TAS	16	16	32	2	5	7	39	1.7%	46.2%
VIC	137	197	334	73	64	137	471	20.1%	44.6%
WA	86	94	180	25	27	52	232	9.9%	47.8%
<b>New Zealand</b>	<b>84</b>	<b>76</b>	<b>160</b>	<b>34</b>	<b>37</b>	<b>71</b>	<b>231</b>	<b>9.8%</b>	<b>51.1%</b>
Overseas	5	3	8	1		1	9	0.4%	66.7%
<b>Total</b>	<b>761</b>	<b>901</b>	<b>1662</b>	<b>340</b>	<b>346</b>	<b>686</b>	<b>2348</b>	<b>100.0%</b>	<b>46.7%</b>

NB: Excludes two trainees; one had no gender recorded and one identified as unspecified gender



Table 16 presents the distribution of ACEM advanced trainees by region, age group and gender. The majority of advanced trainees, 69% (1154/1660) were aged between 30 and 39 years.

Table 16. Advanced trainees by region, age group and gender

Region	<30 years			30-34 years			35-39 years			40-44 years			45-49 years			50+ years			Total
	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total	
<b>Australia</b>	<b>94</b>	<b>71</b>	<b>165</b>	<b>325</b>	<b>334</b>	<b>659</b>	<b>154</b>	<b>224</b>	<b>378</b>	<b>62</b>	<b>120</b>	<b>182</b>	<b>29</b>	<b>49</b>	<b>78</b>	<b>6</b>	<b>24</b>	<b>30</b>	<b>1492</b>
ACT	2		2	1	5	6	2	3	5	1	1	2	1	2	3	1	1	2	20
NSW	26	20	46	92	99	191	44	66	110	17	37	54	8	11	19	3	12	15	435
NT	6	1	7	10	7	17	5	3	8		2	2					1	1	35
QLD	22	23	45	86	77	163	38	50	88	21	28	49	7	9	16	2	2	4	365
SA	3	2	5	20	19	39	5	18	23	6	12	18	3	4	7				92
TAS	1	3	4	10	4	14	2	8	10	2		2	1	1	2				32
VIC	19	15	34	62	76	138	41	55	96	8	26	34	6	18	24		7	7	333
WA	15	7	22	44	47	91	17	21	38	7	14	21	3	4	7		1	1	180
<b>New Zealand</b>	<b>10</b>	<b>9</b>	<b>19</b>	<b>43</b>	<b>36</b>	<b>79</b>	<b>16</b>	<b>14</b>	<b>30</b>	<b>10</b>	<b>12</b>	<b>22</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>160</b>
Overseas				4	2	6	1	1	2										8
<b>Total</b>	<b>104</b>	<b>80</b>	<b>184</b>	<b>372</b>	<b>372</b>	<b>744</b>	<b>171</b>	<b>239</b>	<b>410</b>	<b>72</b>	<b>132</b>	<b>204</b>	<b>32</b>	<b>51</b>	<b>83</b>	<b>8</b>	<b>27</b>	<b>35</b>	<b>1660</b>

NB: Excludes three trainees; two trainees had no date of birth recorded and one trainee identified as unspecified gender

The average age of ACEM advanced trainees was 35.1 years and females were, on average, younger than males. Average age of advanced trainees, by country and gender is displayed in Table 17.

Table 17. Average age of advanced trainees by country and gender (N=1660)

Region	Average of age		
	Female	Male	All
Australia	34.2	35.9	35.1
New Zealand	34.8	35.2	35.0
Overseas	32.2	32.3	32.3
<b>All</b>	<b>34.3</b>	<b>35.8</b>	<b>35.1</b>

NB: Excludes three trainees; two trainees had no date of birth recorded and one trainee identified as unspecified gender

Figures 5 and 6 display ACEM trainees in Australia and New Zealand, respectively, by age group and gender.

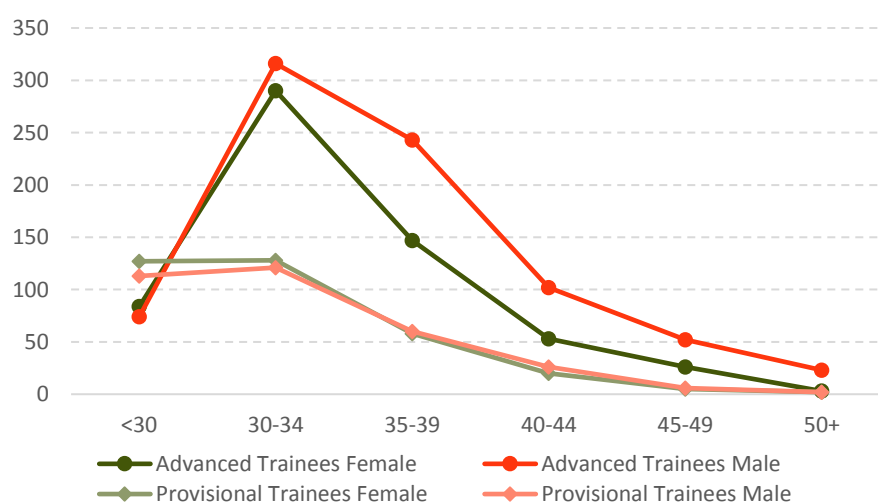


Figure 5. ACEM trainees in Australia, by age group and gender

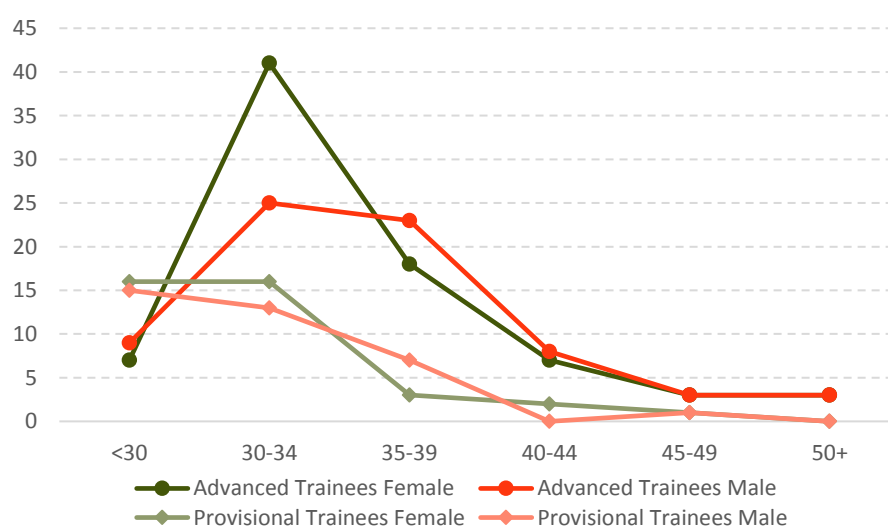


Figure 6. ACEM trainees in New Zealand, by age group and gender (n=231)

Table 18 presents the number of trainees who self-identified as Aboriginal or Māori as recorded in their ACEM members profile by region. No trainees identified as Torres Strait Islander.

Table 18. ACEM trainees who self-identified as Indigenous, by region

Region	Aboriginal		Torres Strait Islander		Māori	
	N	%*	N	%	N	%*
Australia	5	0.24%	-	-	3	0.14%
New Zealand	3	1.30%	-	-	3	1.30%
<b>Total</b>	<b>8</b>	<b>0.34%</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>0.26%</b>

\*Percent of all ACEM trainees

### 3.2.2 ACEM trainee placement details

ACEM advanced trainees contribute significantly to the provision of emergency medicine clinical services and are generally employed at an ACEM accredited hospital.

This section presents the placement details of advanced trainees in 2016 and represents their most recent training placement. Of the 1663 advanced trainees in 2016, 186 had interrupted training and are excluded from further analysis, as are the ten advanced trainees working overseas, leaving 1477 advanced trainees with a placement in Australia or New Zealand. There were 51 advanced trainees undertaking two part-time placements; 90% (n=46) were completing both placements at the same hospital – one in the ED and one in a different discipline.

Only 16% (n=203) of advanced trainees in Australia and 37% (n=54) in New Zealand were working in regional/ rural localities at their placement workplace. The breakdown of location of placement workplace by region is presented in Table 19 and Figure 7.

Table 19. Workplace location of advanced trainees working in Australia and New Zealand by region

Region	Total	Metropolitan	Regional or Rural	% Regional or Rural
<b>Australia</b>	<b>1303</b>	<b>1100</b>	<b>203</b>	<b>15.6%</b>
ACT	8	7	1	12.5%
NSW	379	341	38	10.0%
NT	37		37	100.0%
QLD	329	259	70	21.3%
SA	76	76		0.0%
TAS	21		21	100.0%
VIC	300	280	20	6.7%
WA	153	137	16	10.5%
<b>New Zealand</b>	<b>146</b>	<b>92</b>	<b>54</b>	<b>37.0%</b>
<b>Total</b>	<b>1449</b>	<b>1192</b>	<b>257</b>	<b>17.7%</b>

NB: Excludes 18 trainees working in non-ambulance retrieval medicine and 10 undertaking a placement outside of Australia and New Zealand

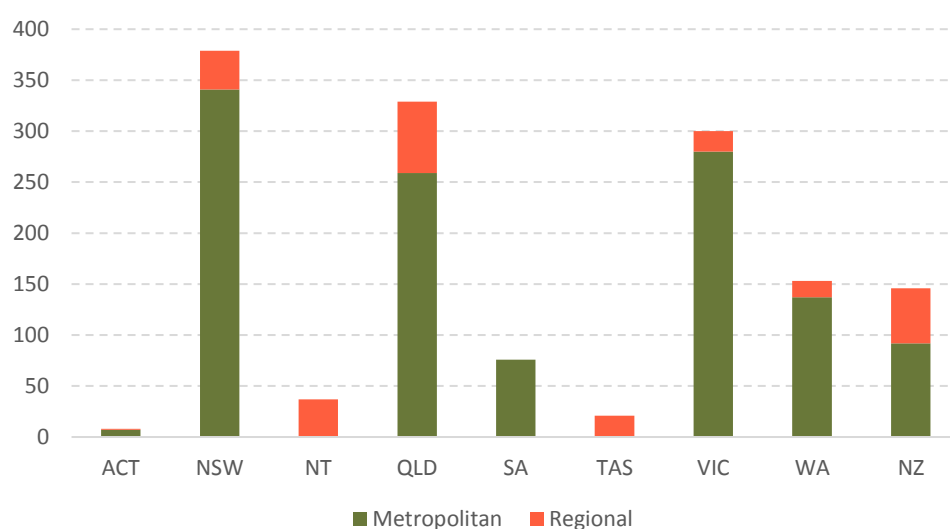


Figure 7: Distribution of ACEM advanced trainees' placement workplace, by location and region (n=1449)

Table 20 displays the workplace profile of advanced trainees, including region, sector (public, private or non-hospital) and discipline – emergency medicine in an ED (ED) critical care medicine (CC), pre-hospital/ retrieval medicine (pre-hosp.) and other. Pre-hospital retrieval services operate out of both public hospitals and non-hospital settings and are therefore included under both sectors in Table 20.

Table 20. Training placement discipline of advanced trainees in Australia and New Zealand, by sector and region

Region	Public Hospital									Private Hospital					Non-Hospital					Total
	ED		CC		Pre-hosp.		Other		Total	ED		CC		Total	Pre-hosp.		Other		Total	
	N	%	N	%	N	%	N	%		N	%	N	%		N	%	N	%		
Australia	917	62.1%	247	16.7%	4	0.3%	87	5.9%	1255	26	1.8%	9	0.6%	35	18	1.2%	13	0.9%	31	1321
ACT	5	0.3%	1	0.1%		0.0%			6							2	0.1%	2	8	
NSW	271	18.3%	72	4.9%	2	0.1%	26	1.8%	371	4	0.3%			4	5	0.3%	4	0.3%	9	384
NT	25	1.7%	7	0.5%	2	0.1%	2	0.1%	36						2	0.1%	1	0.1%	3	39
QLD	222	15.0%	69	4.7%			24	1.6%	315	8	0.5%	5	0.3%	13	2	0.1%	1	0.1%	3	331
SA	56	3.8%	14	0.9%			6	0.4%	76						2	0.1%			2	78
TAS	14	0.9%	4	0.3%			3	0.2%	21											21
VIC	214	14.5%	51	3.5%			17	1.2%	282	12	0.8%	4	0.3%	16	5	0.3%	2	0.1%	7	305
WA	110	7.4%	29	2.0%			9	0.6%	148	2	0.1%			2	2	0.1%	3	0.2%	5	155
New Zealand	98	6.6%	37	2.5%			9	0.6%	144								2	0.1%	2	146
Overseas																			10	
Total	1015	68.7%	284	19.2%	4	0.3%	96	6.5%	1399	26	1.8%	9	0.6%	35	18	1.2%	15	1.0%	33	1477

CC=ICU/anaesthetics; Pre-hosp.=pre-hospital/retrieval medicine; Other Hospital: e.g. toxicology, general medicine; Other Non-Hospital: e.g. general practice

The majority (79%) of the advanced trainees working in Australia and New Zealand were working in public hospitals in metropolitan locations (Table 21).

Table 21. Workplace location and sector for advanced trainees employed in Australia or New Zealand

	Public Hospital	Private Hospital	Non-Hospital	Total
<b>Australia</b>	<b>1255</b>	<b>35</b>	<b>31</b>	<b>1321</b>
Metropolitan	1062	32	6	1100
Rural or Regional	193	3	7	203
Pre-Hospital/Retrieval Medicine (non-ambulance)			18	18
<b>New Zealand</b>	<b>144</b>		<b>2</b>	<b>146</b>
Metropolitan	92			92
Rural or Regional	52		2	54
<b>Total</b>	<b>1399</b>	<b>35</b>	<b>33</b>	<b>1467</b>

Table 22 presents the working time arrangements, by gender and age group for advanced trainees working in Australia and New Zealand. The majority of advanced trainees (79%; n=1158) were working in full-time positions.

Table 22. Employment status of advanced trainees in Australia and New Zealand, by gender and age group

Age group	Female					Male					Total
	FT	%	PT	%	Total	FT	%	PT	%	Total	
<30 years	92	6.3%	2	0.1%	94	69	4.7%	1	0.1%	70	164
30-34 years	267	18.2%	46	3.2%	313	313	21.4%	30	2.0%	343	656
35-39 years	100	6.8%	40	2.7%	140	178	12.2%	40	2.7%	218	358
40-44 years	41	2.8%	23	1.6%	64	80	5.5%	37	2.5%	117	181
45-49 years	16	1.1%	14	1.0%	30	31	2.1%	16	1.1%	47	77
50+ years	1	0.1%	5	0.3%	6	13	0.9%	9	0.6%	22	28
<b>Total</b>	<b>517</b>	<b>35.3%</b>	<b>130</b>	<b>8.9%</b>	<b>647</b>	<b>684</b>	<b>46.8%</b>	<b>133</b>	<b>9.0%</b>	<b>817</b>	<b>1464</b>

FT=full-time; PT=part-time

NB: Excludes two trainees with no date of birth recorded, and one trainee with unspecified gender

### 3.2.3 ACEM trainee trends

Over the period 2007 to 2016, the compound annual increase has been 5.2% for all trainees and 9.3% for advanced trainees in Australia. Over this period in New Zealand, the compound annual increase has been 4.5% for all trainees and 4.6% for advanced trainees. The annual number of all trainees and advanced trainees in Australia (Figure 8) and New Zealand (Figure 9) for the period 2007 to 2016 is presented below. Basic trainees are included in the 'all trainee' pool for 2007 to 2011, but excluded from 2012 to 2016, as they were phased out of officially being part of the ACEM Training Program.

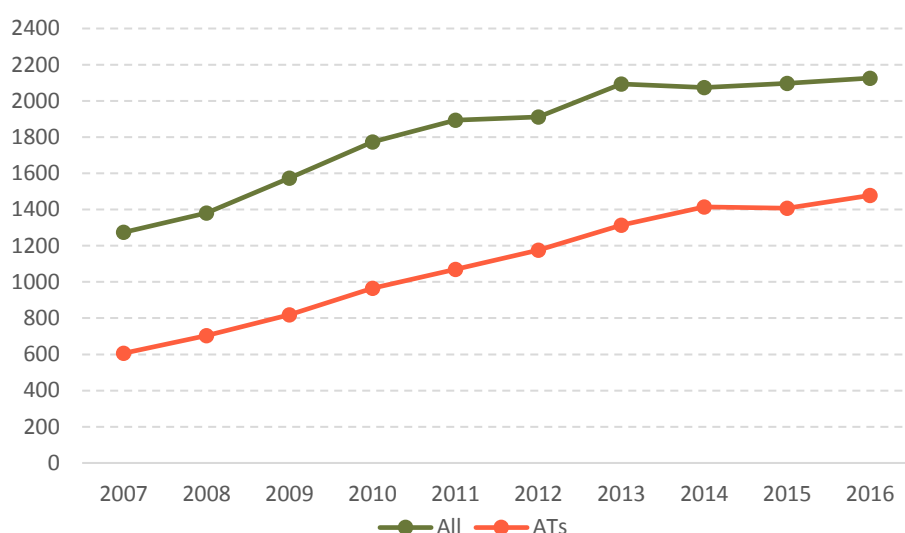


Figure 8. Annual number of all trainees and advanced trainees in Australia, 2007-2016

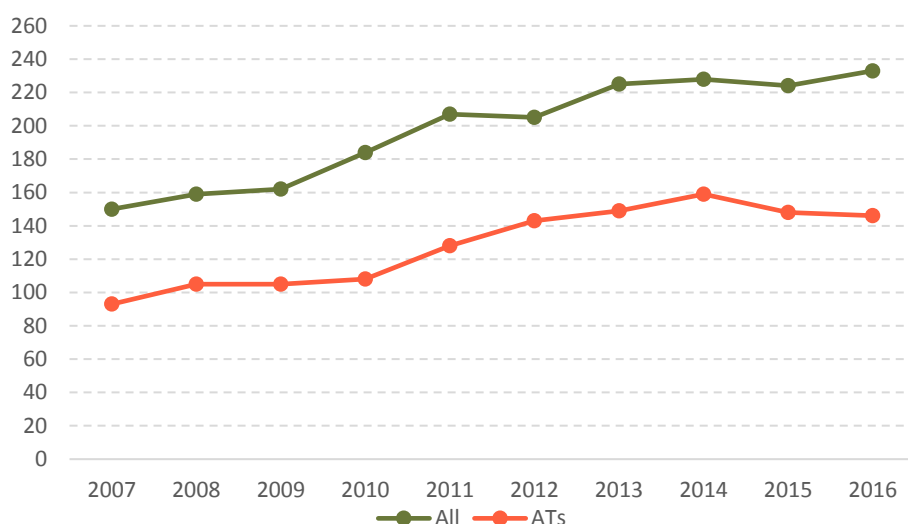


Figure 9. Annual number of all trainees and advanced trainees in New Zealand, 2007-2016

### 3.3 Emergency medicine service delivery

FACEMs with workplace details and ACEM advanced trainees per population, by region is presented in Table 23.

Table 23. Active FACEMs and advanced trainees per population - June 2016, by region

Region	FACEMs	% of all FACEMs*	Adv. Trainees	% of all Adv. Trainees**	Population '000 <sup>1,2</sup>	% combined population	SPR	FACEM per 100,000	STPR	FACEM+ trainee per 100,000
<b>Australia</b>	<b>1875</b>	<b>88.7%</b>	<b>1321</b>	<b>90.0%</b>	<b>24125.6</b>	<b>83.7%</b>	<b>1: 12867</b>	<b>7.8</b>	<b>1: 7549</b>	<b>13.2</b>
ACT	19	0.9%	8	0.5%	396.3	1.4%	1: 20858	4.8	1: 14678	6.8
NSW	514	24.3%	384	26.2%	7726.9	26.8%	1: 15033	6.7	1: 8605	11.6
NT	38	1.8%	39	2.7%	245.2	0.9%	1: 6452	15.5	1: 3184	31.4
QLD	452	21.4%	331	22.6%	4843.3	16.8%	1: 14599	9.3	1: 6186	16.2
SA	117	5.5%	78	5.3%	1708.1	5.9%	1: 12660	6.8	1: 8760	11.4
TAS	41	1.9%	21	1.4%	519.1	1.8%	1: 12660	7.9	1: 8372	11.9
VIC	476	22.5%	305	20.8%	6069.6	21.1%	1: 12751	7.8	1: 7772	12.9
WA	218	10.3%	155	10.6%	2617.1	9.1%	1: 12005	8.3	1: 7016	14.3
<b>New Zealand</b>	<b>240</b>	<b>11.3%</b>	<b>146</b>	<b>10.0%</b>	<b>4693.0</b>	<b>16.3%</b>	<b>1: 19554</b>	<b>5.1</b>	<b>1: 12158</b>	<b>8.2</b>

\*Percent of all FACEMs in AU+NZ with available workplace details, excl. Locums (n=2110); \*\*Percent of all advanced trainees in AU+NZ with available placement details (n=1467)

Combined population = Australia (excluding Jervis Bay Territory, Christmas Island and the Cocos Islands) + New Zealand

SPR = Specialist (FACEM) to population ratio

STPR = Specialist (FACEM) and Specialist Trainee (Advanced Trainee) to population ratio

Population data sources:

<sup>1</sup> (Australian Bureau of Statistics, Australian Demographic Statistics, 2016)

<sup>2</sup> (Statistics New Zealand, National Population Estimates, 2016)



### 3.4 Primary and Fellowship examinations trends

#### 3.4.1 Primary examination

A total of 2687 trainees have passed the primary examination since 2007. There was a small increase in average time from ACEM registration to passing the primary exam between 2008 and 2012, however, a decrease was observed in 2013, which presumably coincided with the removal of Basic Training, prior to the commencement of Provisional Training. The number of successful candidates and average months between registration and passing the primary exam over the ten years is displayed in Table 24.

Table 24. Primary examination outcomes, 2007-2016

	Number of successful candidates	Average months – Registration to pass exam
<b>2007-2015</b>	<b>2210</b>	<b>20.0</b>
2007	168	18.9
2008	210	18.2
2009	247	19.4
2010	255	20.4
2011	245	22.2
2012	314	23.8
2013	325	18.4
2014	307	18.8
2015	282	17.2
<b>2016</b>	<b>334</b>	<b>18.9</b>
<b>Total</b>	<b>2687</b>	<b>19.6</b>

#### 3.4.2 Fellowship examination

A total of 1294 FACEMs have passed the Fellowship examination since 2007. The number of successful candidates in 2016 was 181. The number of successful candidates and average months between commencing advanced training and passing the Fellowship exam over the ten years is displayed in Table 25.

Table 25. Fellowship examination outcomes, 2007-2016

	Number of successful candidates	Average months – Commencing advanced training to pass exam
<b>2007-2015</b>	<b>1113</b>	<b>58.4</b>
2007	78	55.4
2008	92	57.4
2009	83	59.5
2010	93	59.9
2011	94	60.6
2012	130	61.6
2013	145	60.8
2014	135	59.8
2015	263	61.9
<b>2016</b>	<b>181</b>	<b>57.1</b>
<b>Total</b>	<b>1294</b>	<b>59.4</b>

### 3.5 Emergency departments accredited for ACEM training

There were 141 hospitals accredited for ACEM ED advanced training at the end of 2016; 123 in Australia and 18 in New Zealand. The distribution of these hospitals by region and by ACEM accreditation delineation is presented in Table 26. The ACEM accreditation delineations indicate the number of months (6, 12, 18 or 24) an advanced trainee can undertake an approved ED placement at the site.

Of the Australian hospitals accredited for ED training, eleven were private hospitals and all others were in the public sector. There are no private hospitals approved for ED training in New Zealand.

Table 26. Hospitals with EDs accredited for Advanced Training by region and role delineation

Region	Major referral				Urban district					Regional/rural					Total
	12	18	24	Total	6	12	18	24	Total	6	12	18	24	Total	
<b>Australia</b>	<b>1</b>	<b>5</b>	<b>26</b>	<b>32</b>	<b>15</b>	<b>13</b>	<b>4</b>	<b>4</b>	<b>36</b>	<b>16</b>	<b>22</b>	<b>8</b>	<b>9</b>	<b>55</b>	<b>123</b>
ACT			1	1							1			1	2
NSW	1	1	9	11	5	5	2	1	13	6	6	3		15	39
NT			1	1			1		1						2
QLD		1	4	5	2	4		2	8	5	5	3	1	14	27
SA		1	2	3						2	2		1	5	8
TAS			1	1	1	1			2						3
VIC		1	5	6	5	1	1	1	8	2	6	1	6	15	29
WA		1	3	4	2	2			4	1	2	1	1	5	13
<b>New Zealand</b>		<b>1</b>	<b>5</b>	<b>6</b>	<b>5</b>	<b>3</b>			<b>8</b>	<b>3</b>	<b>1</b>			<b>4</b>	<b>18</b>
<b>Total</b>	<b>1</b>	<b>6</b>	<b>31</b>	<b>38</b>	<b>20</b>	<b>16</b>	<b>4</b>	<b>4</b>	<b>44</b>	<b>19</b>	<b>23</b>	<b>8</b>	<b>9</b>	<b>59</b>	<b>141</b>

## 4 CONCLUSION

This report provides a detailed analysis of the emergency medicine specialist workforce and training activities in 2016, with comparisons to data from 2007 to 2015. ACEM has seen an increase in FACEMs coming through the program since 2007. In 2016, FACEMs were working predominantly in metropolitan areas and as highlighted in this report there was lack of FACEMs in regional areas. An increase in the number of trainees enrolled in the ACEM Training Program over the period 2007 and 2013 was observed, with trainee numbers remaining steady between 2013 and 2016.

These findings will be used to inform forecasting of numbers of FACEMs in Australia and New Zealand and to inform planning and policies on trainee intake and workforce distribution.

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## **6 SUGGESTED CITATION**

Australasian College for Emergency Medicine. (2017). *Specialist Emergency Medicine Workforce and Training Activities 2016*. ACEM Report: Melbourne.

## **7 CONTACT FOR FURTHER INFORMATION**

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