The challenge of the aging Emergency Physician workforce
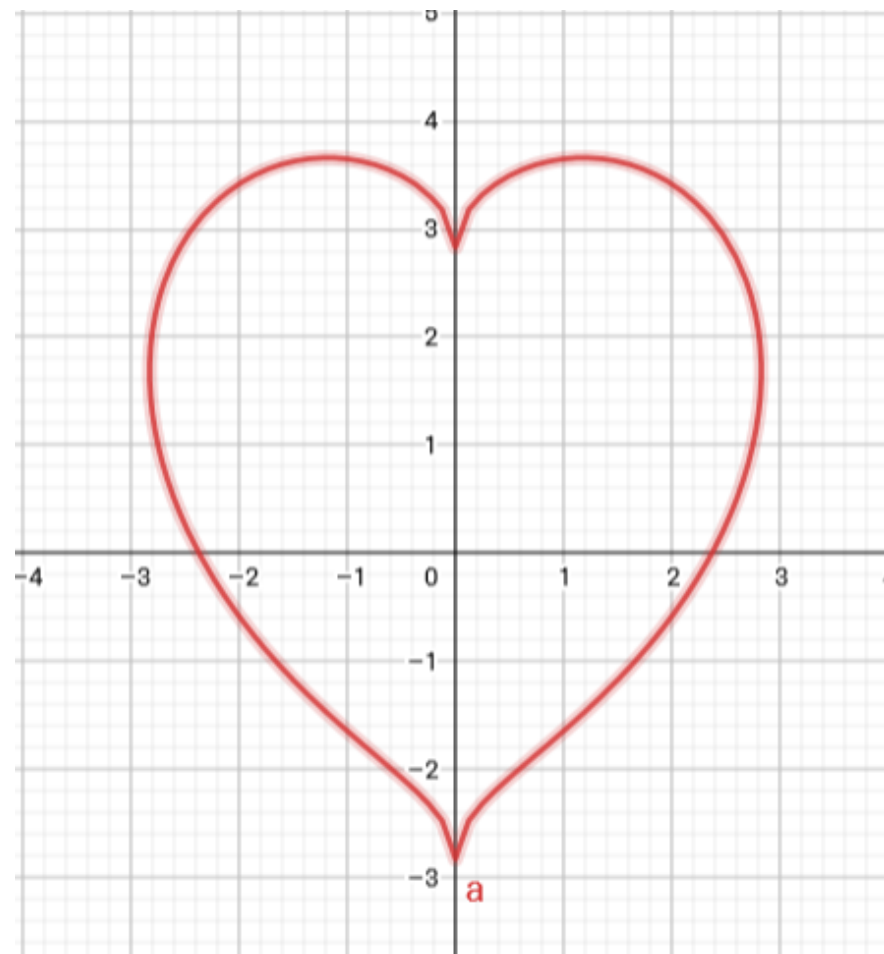
Emmanuel Jo
Manager
Analytics and Modelling
Health Workforce
Ministry of Health

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Analytics and Modelling
Health Workforce
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Analytic team's advise for what to write on Valentine's card.

Our way of expressing LOVE
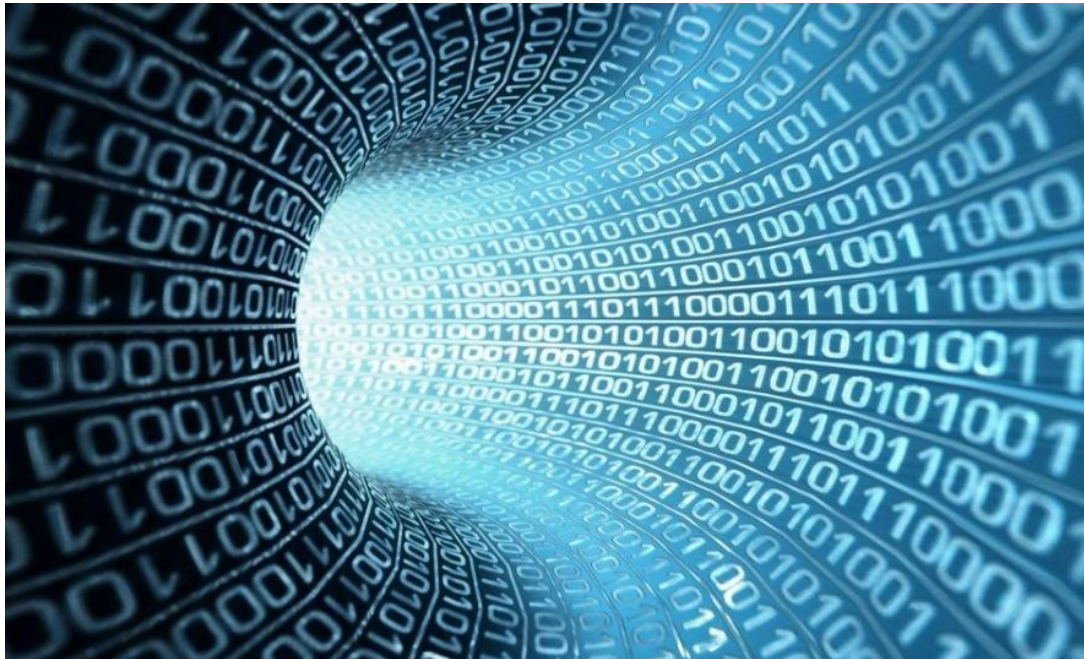
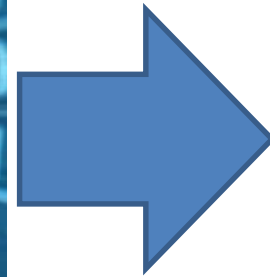$$\left(y - \sqrt{|x|}\right)^2 + x^2 = 8$$

Forecasting

https://positivepsychologyprogram.com/affective-forecasting/

Identifying patterns

Source: http://grigory.us/big-data-class.html
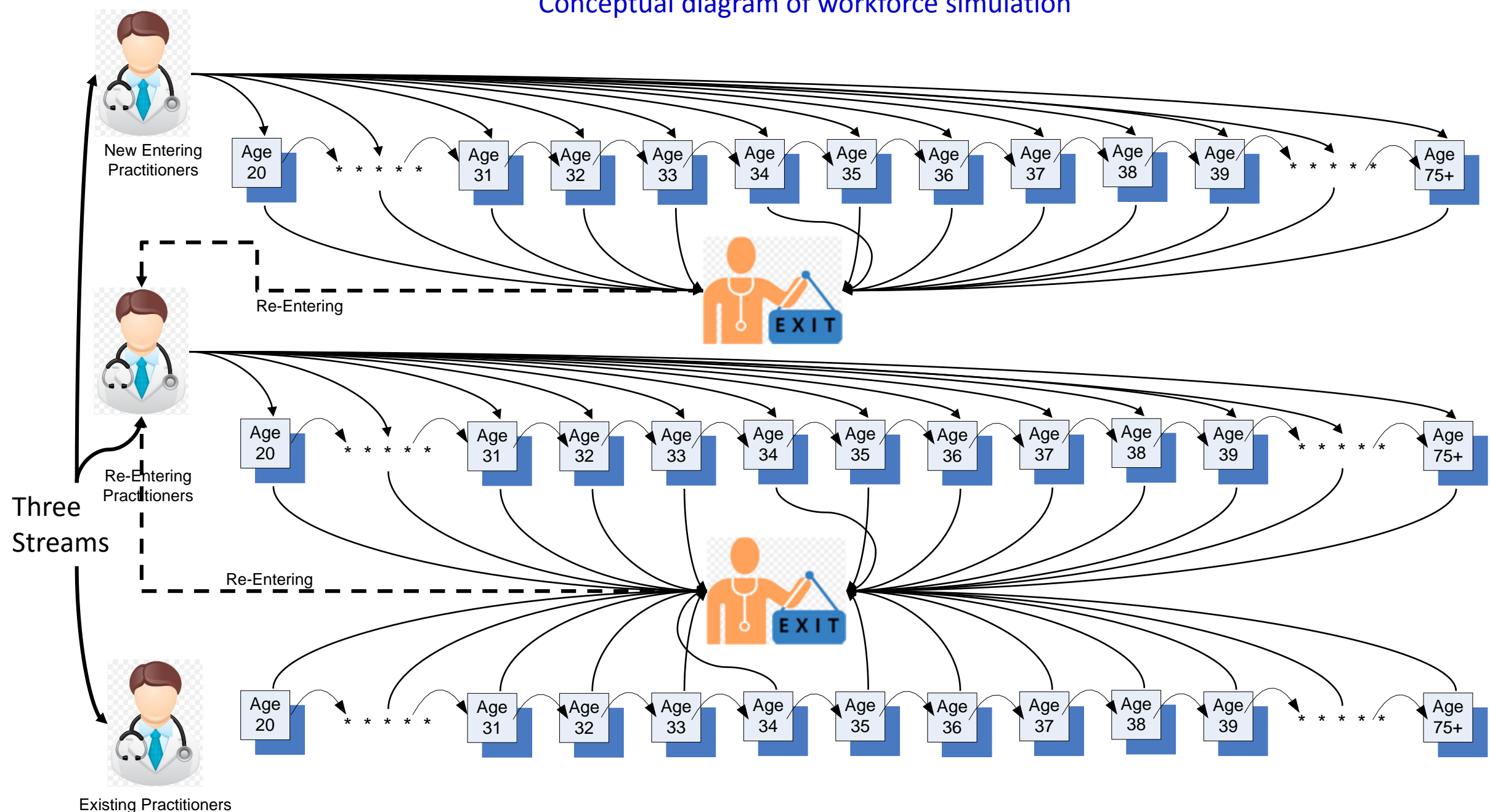
Supply: APC renewal pattern by age, ethnicity, DHB specific patterns
exit, entry working hours for

Demand : Hospitalization data with DRG case-weights or Hours spend by age, gender, ethnicity, DHB

Big Data: extremely large data sets that may be analysed computationally to reveal patterns, trends, and associations, especially relating to human behaviour and interactions

Conceptual diagram of workforce simulation

New Entering Practitioners

Re-Entering

Re-Entering Practitioners

Three Streams

Re-Entering

Existing Practitioners

Age 20 * * * * * Age 31 Age 32 Age 33 Age 34 Age 35 Age 36 Age 37 Age 38 Age 39 * * * * * Age 75+

EXIT

For each scope and any geographical sub group

Emmanuel wins Data Olympics at International Health Workforce Collaborative

Updated on 8 November, 2016 - 14:33

Emmanuel Jo, Principal Technical Specialist, from Workforce Education Intelligence and Planning, HWNZ, People and Transformation, has taken out the top prize at the 'Data Olympics' held as part of the recent International Health Workforce Collaborative (IHWC).
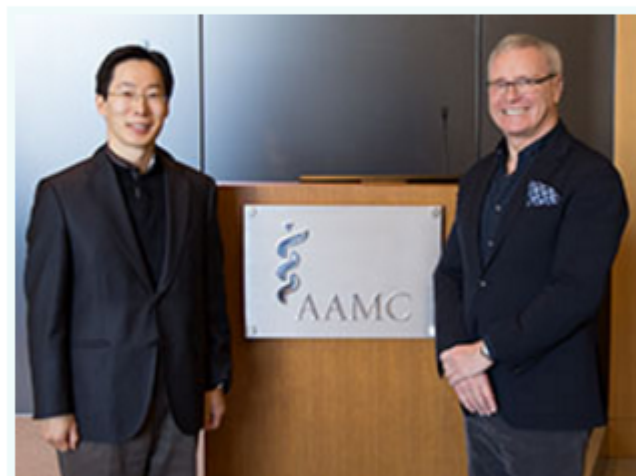
Emmanuel Jo and HWNZ Board Executive Chair Professor Des Gorman

The 16th Collaborative was held in Washington, DC from 24-28 October 2016 hosted at Association of American Medical Colleges. The invitation only conference, provided delegates with a unique opportunity to discuss key global and local workforce issues in the United States, Canada, the United Kingdom, Australia and New Zealand. This is first time the New Zealand Ministry of Health participated in the IHWC. Emmanuel gave an outstanding presentation at the Data Olympics and won gold for New Zealand in challenge 1.

The 'Data Olympics' explored three challenges:

- How are you modelling future health workforce supply, accounting for workforce and broader health system changes?

Formulas used in the model

Basic definitions for formulas used in the model

Let i = age 20,21,22, … , 75 +

Let j = subgroups, eg : Anaesthesia, Cardiothoracic Surgery,.., Vascular surgery,

Let k = 0(base year), 1,2,3,4,5,6,7,8,9,10

Let $O_{i,j,k}$ = Number of pre-existing practitioners for i age, j specialty, after k year(s)

Let $NE_{i,j,k}$ = Number of New Entering practitioners remain after k year(s)

Let $RE_{i,j,k}$ = Number of ReEntering practitioners remain after k year(s)

Let 1 Full Time Equivalent (FTE) = 40 Hours per week

Let $R_{i,j,k}$
= Ratio of FTE per Head Count for practitioners for i age, and j specialty, at k year

Let $L_{i,j,k}$ = Exit rate for practitioners for i age, and j subgroup at k year

Let $G_{j,k}$ = Entry volume for j practitioners at k year

Let $NA_{i,j,k}$ = NewEntry age distribution for i age, and j subgroup at k year

Let $RA_{i,j,k}$ = ReEntry age distribution for i age, and j subgroup at k year

Let $H_{i,j,k}$
= Expected number of specialists in Head Count (HC) for i, and j after k year(s)

Let $F_{i,j,k}$
= Expected number of specialists in Full Time Equivalent (FTE) for i, and j after k year(s)

Calculation of aging of the workforce and workforce flow in the model

Number of pre-existing practitioners after k year(s) can be calculated by

for i = 21 to 74, and k = 1 to 10
$$O_{i,j,k} = O_{i-1,j,k-1} \times (1 - L_{i-1,j,k-1})$$

for i = 75+, and k = 1 to 10
$$O_{i,j,k} = O_{i-1,j,k-1} \times (1 - L_{i-1,j,k-1}) + O_{i,j,k-1} \times (1 - L_{i,j,k-1})$$

Number of new entered practitioners remain after k year(s) can be calculated by

for i = 20, and k = 1 to 10
$$NE_{i,j,k} = NG_{j,k} \times NA_{i,j,k}$$

for i = 20 to 74, and k = 1 to 10
$$NE_{i,j,k} = NG_{j,k} \times NA_{i-1,j,k-1} \times \left(1 - \frac{L_{i-1,j,k-1}}{2}\right) + NE_{i-1,j,k-1} \times (1 - L_{i-1,j,k-1})$$

for i = 75+, and k = 1 to 10
$$NE_{i,j,k} = NG_{j,k} \times NA_{i-1,j,k-1} \times \left(1 - \frac{L_{i-1,j,k-1}}{2}\right) + NE_{i-1,j,k-1} \times (1 - L_{i-1,j,k-1}) + {} + NE_{i,j,k-1} \times (1 - L_{i,j,k-1})$$

Formulas used in the model

Number re-entered practitioners remain after k year(s) can be calculated by

for $i = 20$, and $k = 1$ to 10 $RE_{i,j,k} = RG_{j,k} \times RA_{i,j,k}$

for $i = 20$ to 74, and $k = 1$ to 10

$$RE_{i,j,k} = RG_{j,k} \times RA_{i-1,j,k-1} \times \left(1 - \frac{L_{i-1,j,k-1}}{2}\right) + RE_{i-1,j,k-1} \times \left(1 - L_{i-1,j,k-1}\right)$$

for $i = 75+$, and $k = 1$ to 10

$$RE_{i,j,k} = RG_{j,k} \times RA_{i-1,j,k-1} \times \left(1 - \frac{L_{i-1,j,k-1}}{2}\right) + RE_{i-1,j,k-1} \times \left(1 - L_{i-1,j,k-1}\right) + \\ + RE_{i,j,k-1} \times \left(1 - L_{i,j,k-1}\right)$$

Expected number of practitioners in Head Count (HC) for i, and j after k year(s) can be calculated by

$$H_{i,j,k} = O_{i,j,k} + NE_{i,j,k} + RE_{i,j,k}$$

Expected number of practitioners in Full Time Equivalent (FTE) for i, and j after k year(s) can be calculated by

$$F_{i,j,k} = H_{i,j,k} \times R_{i,j,k}$$

Total number of practitioners for j subgroup after k year(s) in HC can be calculated by

$$\sum_{i=20}^{75+} H_{i,j,k}$$

Total number of practitioners for j subgroup after k year(s) in FTE can be calculated by

$$\sum_{i=20}^{75+} F_{i,j,k}$$

http://orsnz.org.nz/conf51/wp-content/uploads/sites/3/2017/12/ORSNZ17_JoE.pdf

Reflecting future workforce characteristics

Variable exit rates for each age, scope, and year have been used to reflect generational characteristics of the workforce

Variable Full Time Equivalent(FTE) per Head Count (HC) ratio is used for each age, scope, and future year have been used to reflect different patterns of working over different parts of the lifespan, generational characteristics.

New/re-entering practitioners includes new practitioners from training, immigrations to New Zealand, and re-entering practitioners after having a break.

Forecasting Demand for Emergency Medicine Specialists

Measured ED events and hours (~~Presentation~~ - First contact - ED discharge) for measuring work demand
of every ED event (as a crude proxy)

ED presentation   **ED presentation**   **< ------------------- >**   **ED discharge**

Forecasting Demand for Emergency Medicine Specialists

For age group(i), gender (j), ethnicity(k), DHB(l)

$$\frac{Total\ ED\ hours_{ijkl}}{Total\ number\ of\ ED\ events_{ijkl}} = Average\ hours_{ijkl}$$

gender	DHB_name	age_group	Asian/Indian	European/Other	Mäori	Pacific people
Female	Auckland	00-04	4310.1	4551.4	1593.8	3433.2
Female	Auckland	05-09	1464.8	2016.7	659.8	1236.9
Female	Auckland	10-14	778.5	2051.4	638.5	1073.2
Female	Auckland	15-19	947.9	2800.9	1166.7	1292.3
Female	Auckland	20-24	1695.1	4799.1	1241.8	1901.4
Female	Auckland	25-29	2286.6	4395.1	1175.8	1698.2
Female	Auckland	30-34	2205.7	3336.3	1134.8	1207.4
Female	Auckland	35-39	1498.5	2562.3	781	952.7
Female	Auckland	40-44	1183.2	2350	544.4	1127.4
Female	Auckland	45-49	1136.2	2612.4	705.7	1095.2
Female	Auckland	50-54	1324.1	2913.9	693.2	1237.7
Female	Auckland	55-59	1206.6	2726.6	762.2	1097.9
Female	Auckland	60-64	1330.8	2997.9	547.6	1256.4
Female	Auckland	65-69	1080.8	3133.8	438.6	817.2
Female	Auckland	70-74	971.9	3466.2	377.2	749.6
Female	Auckland	75-79	1239.6	3952.4	324.6	801.9
Female	Auckland	80-84	1040.3	3880	308.3	619.4
Female	Auckland	85+	876	9037.2	161.9	492.6

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Asian/Indian	European/Other	Mäori	Pacific people
2160	2000	684	1469
725	873	265	541
339	792	225	418
413	1173	470	556
761	1972	552	811
1062	1806	488	714
983	1390	443	490
627	1056	302	383
436	904	215	401
415	915	255	401
464	969	233	399
388	862	248	356
398	931	168	382
315	946	135	251
255	969	99	203
318	1032	93	213
261	996	74	159
212	2215	33	125

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age_group	Asian/Indian	European/Other	Mäori	Pacific people
00-04	2.00	2.28	2.33	2.34
05-09	2.02	2.31	2.49	2.29
10-14	2.30	2.59	2.84	2.57
15-19	2.30	2.39	2.48	2.32
20-24	2.23	2.43	2.25	2.34
25-29	2.15	2.43	2.41	2.38
30-34	2.24	2.40	2.56	2.46
35-39	2.39	2.43	2.59	2.49
40-44	2.71	2.60	2.53	2.81
45-49	2.74	2.86	2.77	2.73
50-54	2.85	3.01	2.98	3.10
55-59	3.11	3.16	3.07	3.08
60-64	3.34	3.22	3.26	3.29
65-69	3.43	3.31	3.25	3.26
70-74	3.81	3.58	3.81	3.69
75-79	3.90	3.83	3.49	3.76
80-84	3.99	3.90	4.17	3.90
85+	4.13	4.08	4.91	3.94

Forecasting Demand for Emergency Medicine Specialists

For age group(i), gender (j), ethnicity(k), DHB(l)

$$\frac{ED\ events_{ijkl}}{Total\ number\ of\ population_{ijkl}} = Probablity\ of\ ED\ events_{ijkl}$$

gender	DHB_nam	age_grou	Asian/Indian	European/Other	Mäori	Pacific people
Female	⊟ Auckland	00-04	2160	2000	684	1469
Female	Auckland	05-09	725	873	265	541
Female	Auckland	10-14	339	792	225	418
Female	Auckland	15-19	413	1173	470	556
Female	Auckland	20-24	761	1972	552	811
Female	Auckland	25-29	1062	1806	488	714
Female	Auckland	30-34	983	1390	443	490
Female	Auckland	35-39	627	1056	302	383
Female	Auckland	40-44	436	904	215	401
Female	Auckland	45-49	415	915	255	401
Female	Auckland	50-54	464	969	233	399
Female	Auckland	55-59	388	862	248	356
Female	Auckland	60-64	398	931	168	382
Female	Auckland	65-69	315	946	135	251
Female	Auckland	70-74	255	969	99	203
Female	Auckland	75-79	318	1032	93	213
Female	Auckland	80-84	261	996	74	159
Female	Auckland	85+	212	2215	33	125

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Asian/Indian	European/Other	Mäori	Pacific people
4250	5680	1890	2100
3580	6840	1660	2330
3170	6250	1540	2240
4940	6620	1820	2670
9500	10610	2450	2990
12350	12700	2200	2790
9810	10870	1540	1980
6790	8920	1300	1760
5270	9000	1280	1650
5560	8990	1340	1750
5080	8200	1180	1690
4120	8020	1090	1340
3550	7120	830	1050
2480	6350	550	790
1610	4630	370	510
1090	3690	230	400
650	2530	150	230
360	4010	110	180

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age_group	Asian/Indian	European/Other	Mäori	Pacific people
00-04	50.82%	35.21%	36.19%	69.95%
05-09	20.25%	12.76%	15.96%	23.22%
10-14	10.69%	12.67%	14.61%	18.66%
15-19	8.36%	17.72%	25.82%	20.82%
20-24	8.01%	18.59%	22.53%	27.12%
25-29	8.60%	14.22%	22.18%	25.59%
30-34	10.02%	12.79%	28.77%	24.75%
35-39	9.23%	11.84%	23.23%	21.76%
40-44	8.27%	10.04%	16.80%	24.30%
45-49	7.46%	10.18%	19.03%	22.91%
50-54	9.13%	11.82%	19.75%	23.61%
55-59	9.42%	10.75%	22.75%	26.57%
60-64	11.21%	13.08%	20.24%	36.38%
65-69	12.70%	14.90%	24.55%	31.77%
70-74	15.84%	20.93%	26.76%	39.80%
75-79	29.17%	27.97%	40.43%	53.25%
80-84	40.15%	39.37%	49.33%	69.13%
85+	58.89%	55.24%	30.00%	69.44%

Forecasting Demand for Emergency Medicine Specialists

For age group(i), gender (j), ethnicity(k), DHB(l)

$$ED\ event\ rates_{ijkl} \times Future\ population_{ijkl} = expected\ num\ of\ ED\ events_{ijkl}$$

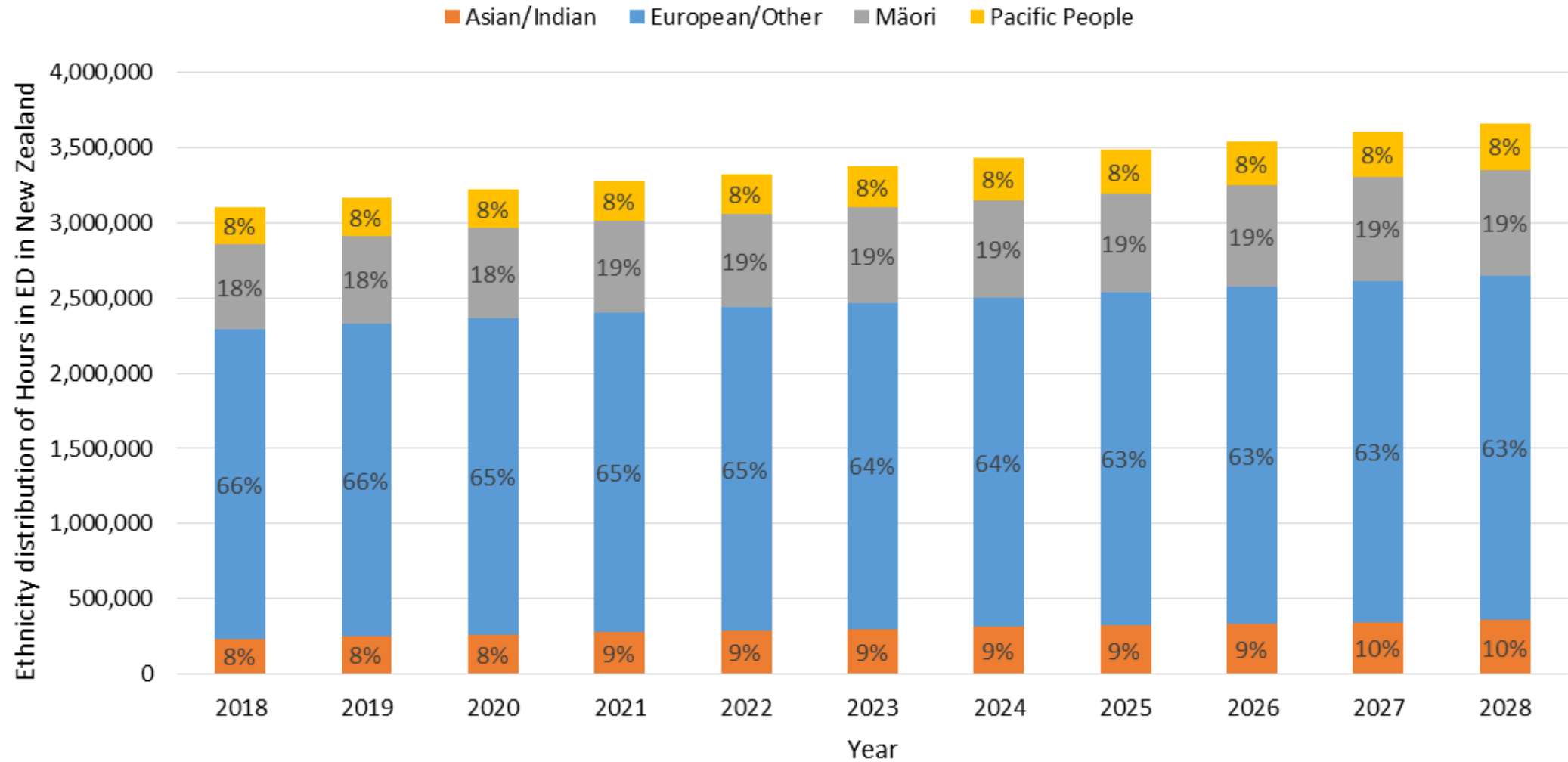| gender	DHB_name	age_group	2019 Asian/Indian	2019 European/Other	2019 Mäori	2019 Pacific people	2020 Asian/Indian	2020 European/Other	2020 Mäori	2020 Pacific people	2021 Asian/Indian	2021 European/Other	2021 Mäori	2021 Pacific people	2022 Asian/Indian	2022 European/Other	2022 Mäori	2022 Pacific people
Female	Auckland	00-04	2470	1599	691	1462	2622	1518	702	1504	2750	1528	713	1539	2846	1588	724	1574
Female	Auckland	05-09	757	886	257	488	778	874	251	453	802	826	247	427	832	742	251	416
Female	Auckland	10-14	370	836	228	420	384	864	228	427	396	887	225	416	399	901	218	407
Female	Auckland	15-19	401	1200	465	544	387	1237	467	527	376	1295	470	525	375	1329	475	510
Female	Auckland	20-24	779	1859	557	827	779	1807	550	835	770	1753	552	841	743	1717	554	846
Female	Auckland	25-29	1169	1864	530	798	1182	1853	550	827	1181	1807	548	842	1170	1751	563	852
Female	Auckland	30-34	1174	1520	512	562	1281	1579	547	606	1372	1646	593	666	1443	1669	624	718
Female	Auckland	35-39	766	1088	309	387	822	1138	318	387	892	1192	335	398	948	1231	344	413
Female	Auckland	40-44	496	842	213	403	535	833	215	416	568	833	213	413	617	842	212	408
Female	Auckland	45-49	428	932	259	369	434	926	257	362	439	903	249	357	444	869	244	355
Female	Auckland	50-54	501	932	237	418	517	935	245	411	535	957	257	399	549	980	263	387
Female	Auckland	55-59	457	851	266	372	477	859	266	380	496	846	264	396	507	823	259	412
Female	Auckland	60-64	452	944	178	404	472	943	190	415	485	957	200	437	502	977	215	444
Female	Auckland	65-69	384	946	164	270	415	961	169	283	452	982	179	280	480	986	194	289
Female	Auckland	70-74	307	1126	118	215	347	1180	126	219	377	1229	131	235	409	1216	136	251
Female	Auckland	75-79	371	1057	105	208	385	1085	113	197	417	1105	129	192	446	1189	142	197
Female	Auckland	80-84	325	1079	79	152	353	1161	94	166	369	1236	99	180	385	1315	104	180
Female	Auckland	85+	253	2198	45	132	294	2182	48	132	336	2215	57	125	383	2237	60	125

Forecasting Demand for Emergency Medicine Specialists

For age group(i), gender (j), ethnicity(k), DHB(l)
$$expected\ num\ of\ ED\ events_{ijkl} \times Average\ ED\ hours_{ijkl}$$
$$= expected\ num\ of\ ED\ hours_{ijkl}$$

			2019	2019	2019	2019	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022	2022
gender	DHB_name	age_group	Asian/Indian	European/Other	Mäori	Pacific people	Asian/Indian	European/Other	Mäori	Pacific people	Asian/Indian	European/Other	Mäori	Pacific people	Asian/Indian	European/Other	Mäori	Pacific people
Female	Auckland	00-04	4929	3638	1611	3417	5233	3454	1636	3515	5487	3478	1661	3597	5679	3614	1687	3678
Female	Auckland	05-09	1530	2046	640	1115	1571	2020	624	1035	1620	1908	616	977	1682	1713	624	950
Female	Auckland	10-14	850	2166	647	1078	882	2238	647	1097	909	2298	639	1068	916	2334	618	1044
Female	Auckland	15-19	921	2864	1154	1263	888	2953	1160	1225	863	3093	1167	1220	862	3173	1180	1186
Female	Auckland	20-24	1734	4523	1252	1940	1734	4397	1237	1959	1715	4265	1242	1971	1654	4179	1247	1984
Female	Auckland	25-29	2518	4537	1277	1899	2544	4509	1325	1966	2542	4399	1320	2003	2520	4260	1358	2027
Female	Auckland	30-34	2635	3649	1312	1384	2873	3791	1400	1494	3078	3950	1518	1640	3238	4005	1599	1768
Female	Auckland	35-39	1830	2640	799	964	1964	2761	823	964	2132	2893	865	991	2267	2987	889	1028
Female	Auckland	40-44	1347	2188	540	1134	1453	2165	544	1168	1540	2165	540	1162	1675	2188	536	1148
Female	Auckland	45-49	1171	2662	716	1008	1187	2644	711	989	1202	2578	690	976	1216	2482	674	970
Female	Auckland	50-54	1431	2804	705	1296	1475	2811	728	1274	1527	2878	764	1238	1567	2946	781	1201
Female	Auckland	55-59	1420	2693	818	1147	1485	2716	818	1172	1543	2676	811	1221	1576	2604	797	1270
Female	Auckland	60-64	1511	3040	581	1328	1578	3036	620	1364	1623	3082	653	1436	1679	3145	699	1460
Female	Auckland	65-69	1316	3134	534	879	1425	3183	550	921	1551	3252	582	910	1647	3267	630	941
Female	Auckland	70-74	1171	4028	449	794	1322	4222	479	808	1437	4395	500	867	1557	4350	520	926
Female	Auckland	75-79	1444	4049	367	782	1501	4156	395	742	1626	4231	452	722	1740	4552	494	742
Female	Auckland	80-84	1296	4202	329	592	1408	4524	391	646	1472	4815	411	700	1536	5122	432	700
Female	Auckland	85+	1046	8970	221	520	1217	8902	235	520	1387	9037	280	493	1582	9127	294	493

Ethnicity distribution of Hours in ED in New Zealand

■ Asian/Indian ■ European/Other ■ Māori ■ Pacific People
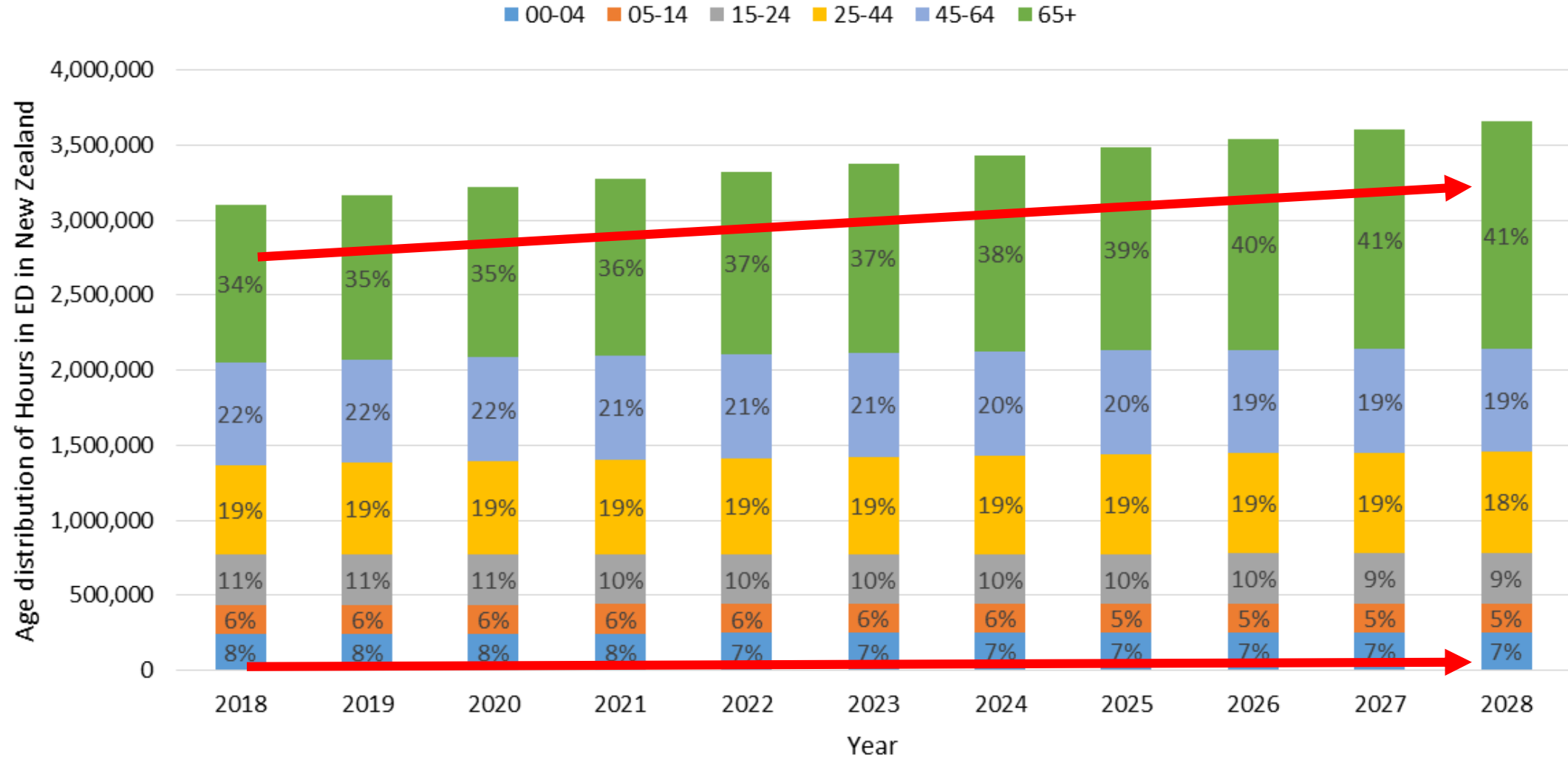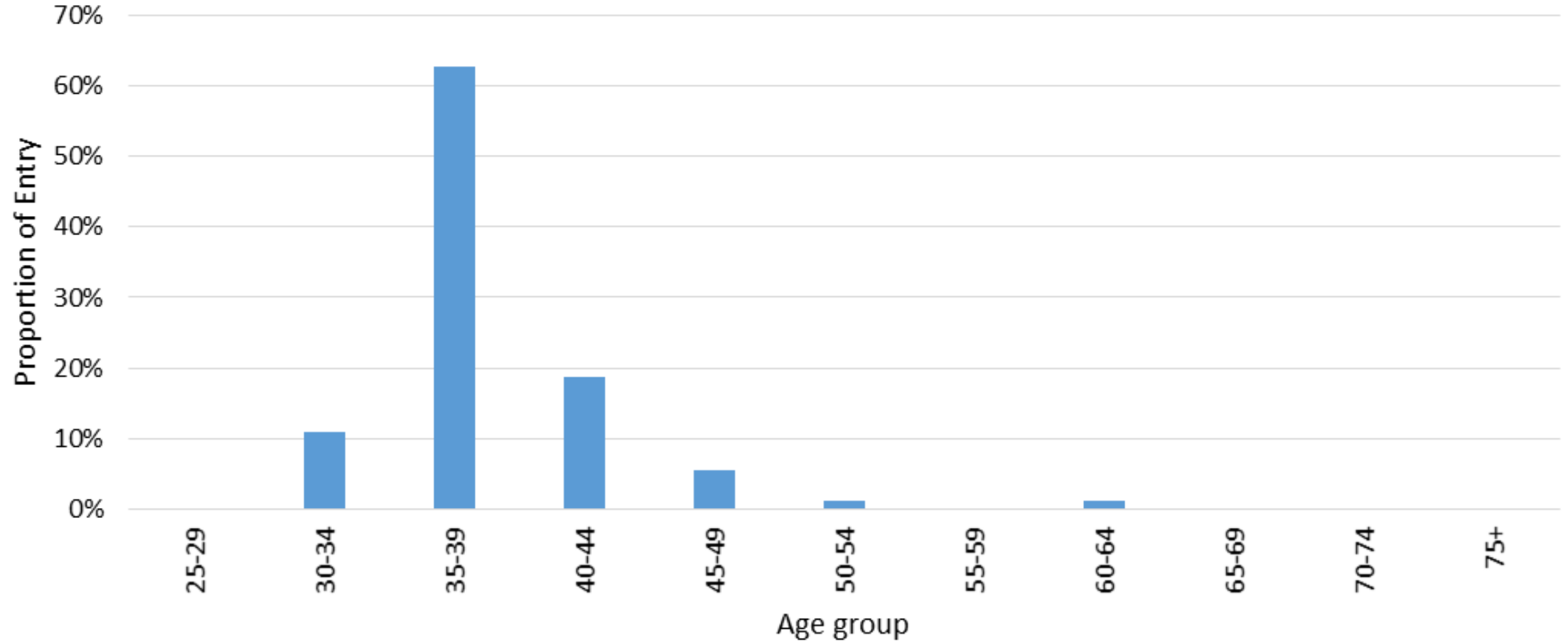
Expected number of ED Events in New Zealand
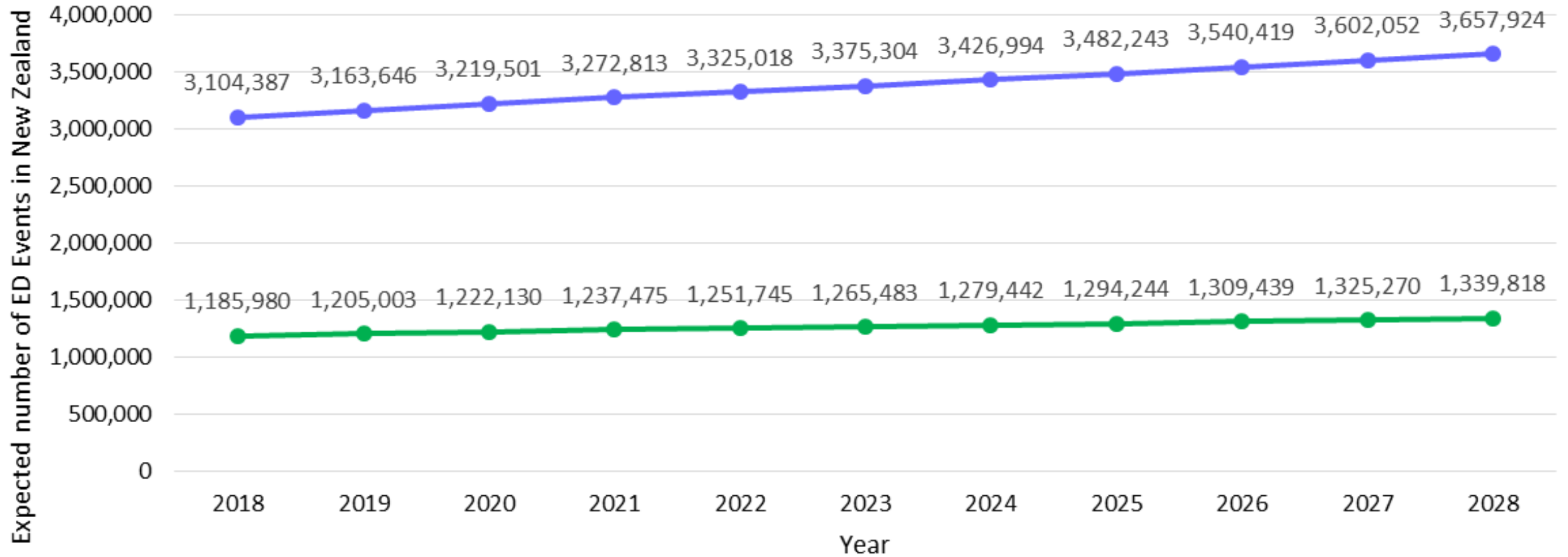
Entry of fully qualified emergency medicine specialists

| New Entry Average Distribution (2016-2018)	Age Group		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	Unknown		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	25-29		0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
11%	30-34		2	14	1	1	2	3	2	3	0	2	4	3	3	6	1
63%	35-39		5	4	9	6	7	7	8	9	12	15	16	9	18	14	25
19%	40-44		2	0	3	2	4	1	3	3	5	3	4	9	3	6	8
5%	45-49		1	1	1	1	2	0	0	2	0	1	3	4	0	4	1
1%	50-54		1	0	1	1	1	1	0	0	0	1	0	0	1	0	0
0%	55-59		0	0	1	0	1	1	1	0	0	1	1	0	0	0	0
1%	60-64		0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
0%	65-69		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	70-74		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	75+		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100%	Total		11	22	16	11	17	13	14	17	17	24	28	25	25	31	35

Emergency Medicine Specialists New Entry distribution (2016-2018 average)

Re-Entry of fully qualified emergency medicine specialists

Re-Entry Average Distribution 2016-2018	Age Group		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	Unknown		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	25-29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6%	30-34		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
31%	35-39		0	0	0	1	2	1	1	1	0	0	2	1	1	1	3
13%	40-44		0	0	3	0	1	0	1	1	1	3	2	0	0	2	0
13%	45-49		0	0	0	1	0	0	0	1	0	0	1	0	1	1	0
25%	50-54		0	1	0	0	1	0	0	1	0	1	1	0	2	2	0
13%	55-59		0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
0%	60-64		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
0%	65-69		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	70-74		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	75+		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100%	Total		0	1	3	2	5	1	3	4	1	4	6	1	5	7	4

Emergency Medicine Specialists Re-Entry distribution (2016-2018 average)
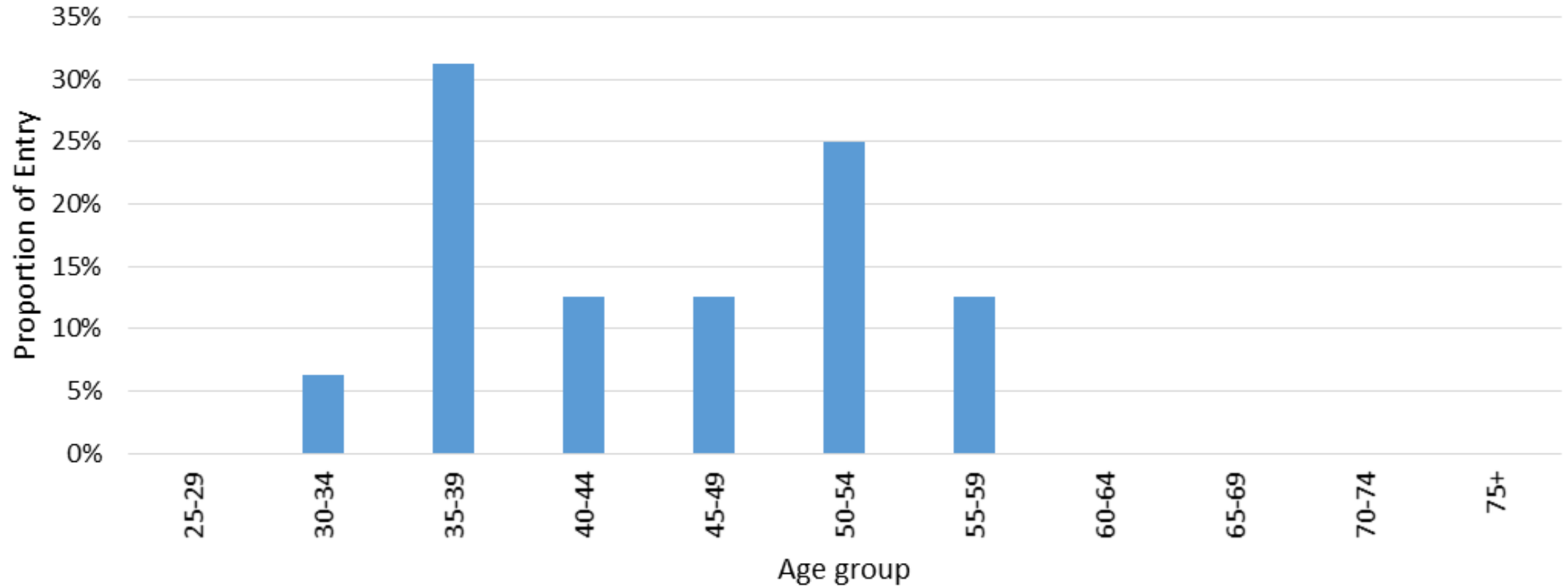
Exit of fully qualified emergency medicine specialists

Exit Rate Distribution (2015-2017)	Age Group	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
0%	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	25-29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13%	30-34	0	0	1	0	0	0	0	1	0	1	0	0	1	1	1
4%	35-39	1	3	0	3	4	2	2	1	2	2	2	3	1	2	3
6%	40-44	2	0	1	3	0	2	3	1	1	5	0	3	2	6	3
2%	45-49	0	0	0	0	1	1	0	3	1	2	0	2	0	2	2
5%	50-54	0	1	0	0	1	0	0	1	1	0	1	0	1	1	3
0%	55-59	0	0	0	0	0	3	1	1	0	0	0	1	0	0	0
0%	60-64	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0
17%	65-69	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
#DIV/0!	70-74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#DIV/0!	75+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4%	Total	3	4	2	6	6	9	6	8	5	10	5	10	5	13	13

Emergency Medicine Specialists exit rate by age group (2016-2018 average)
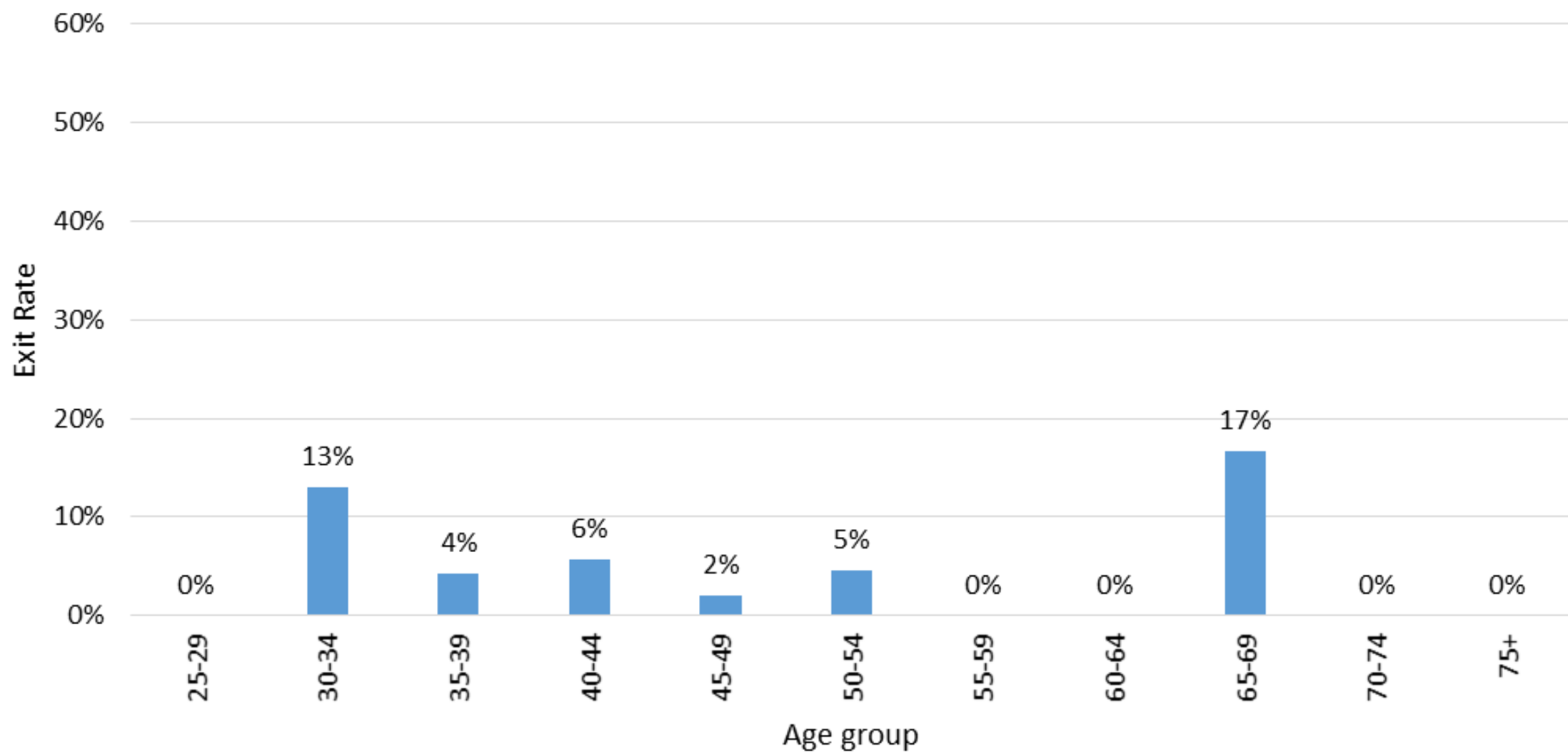
Emergency Medicine Specialists exit rate by age group (2016-2018 average)
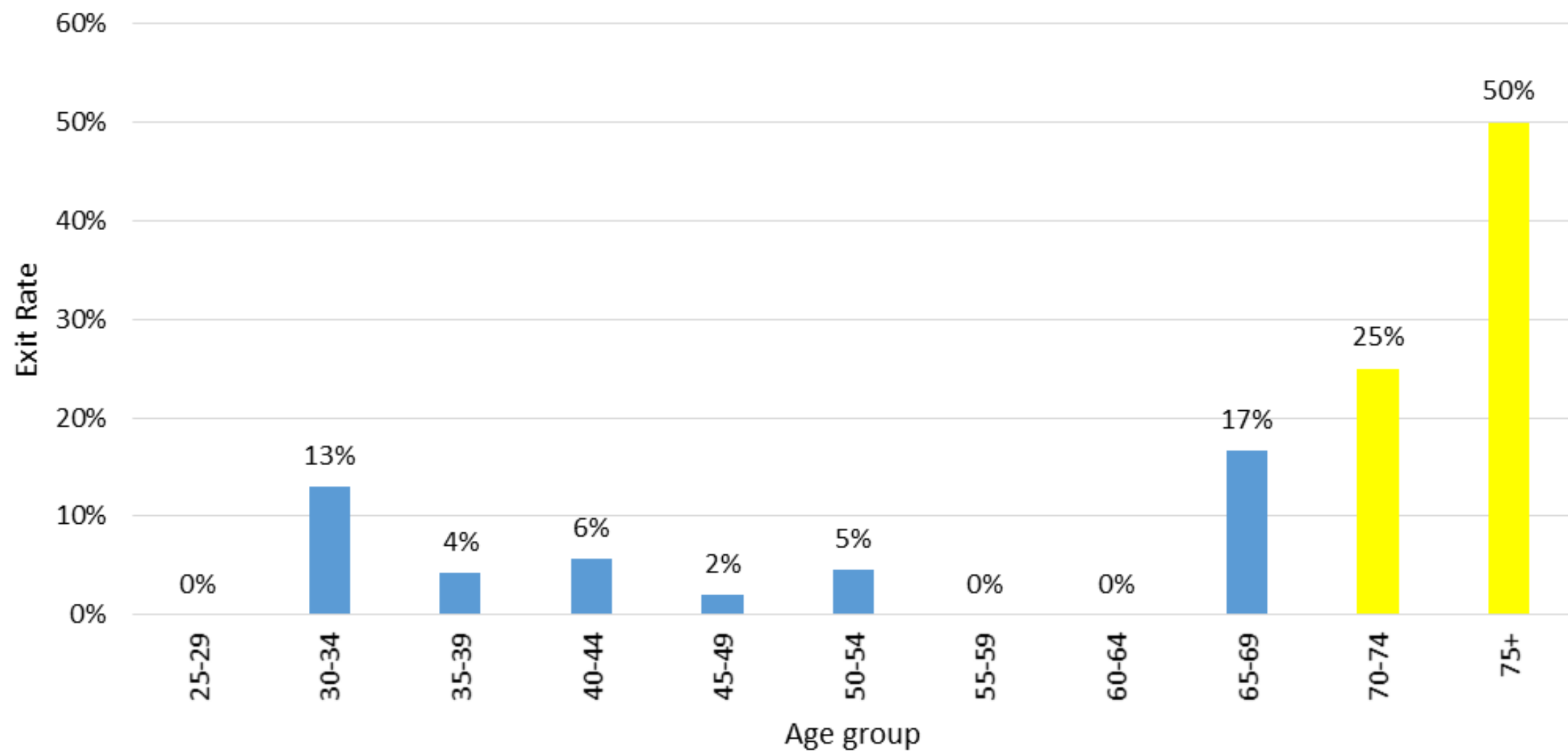
Emergency medicine specialists

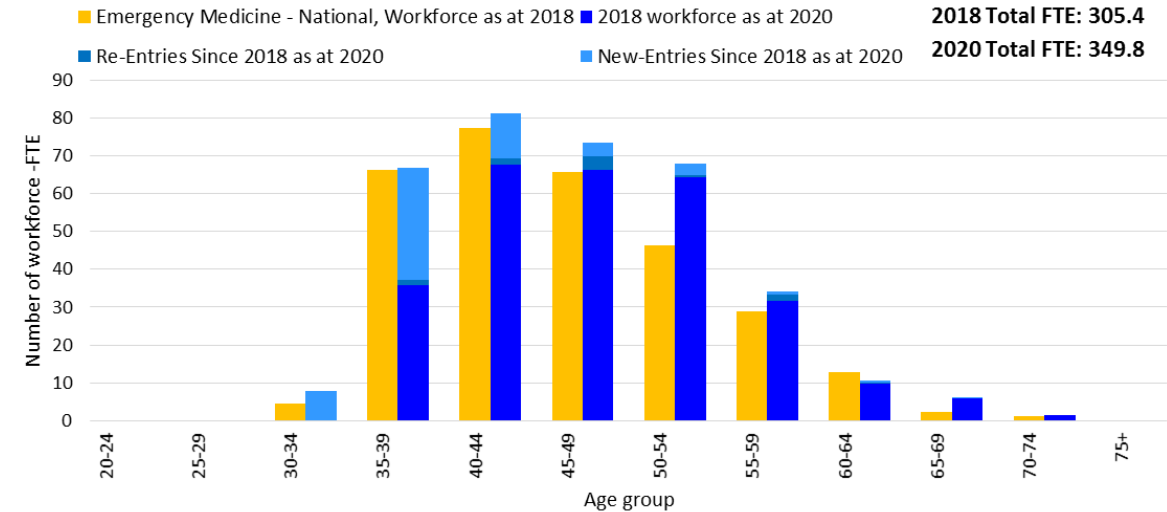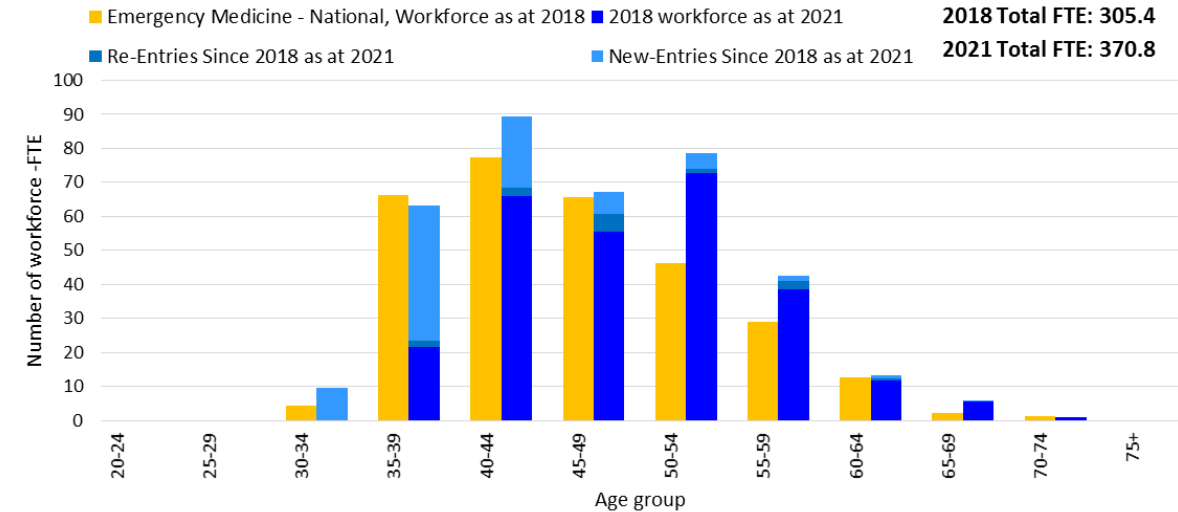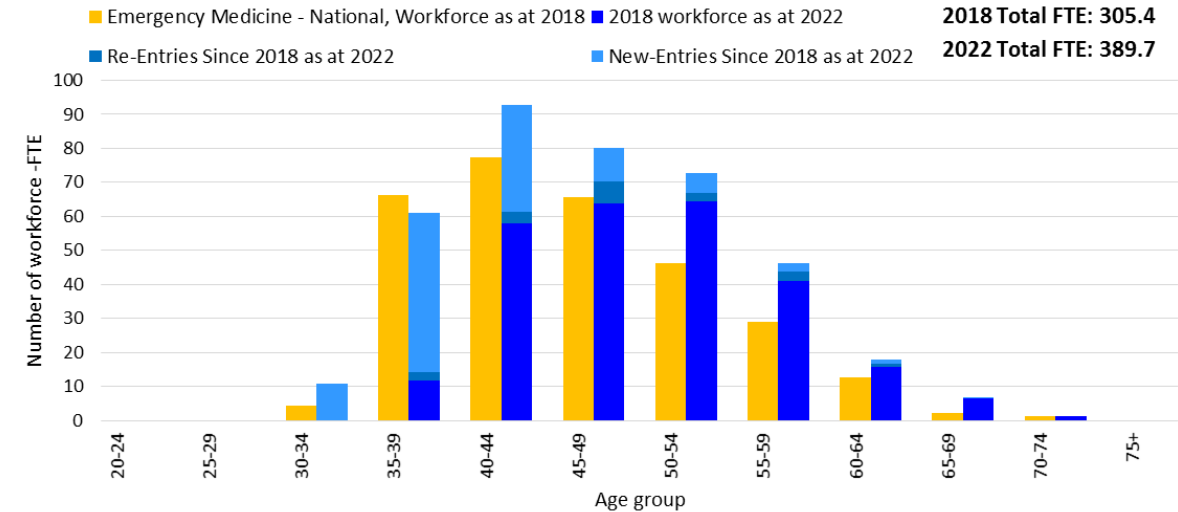National Emergency Medicine Workforce by Age Group - Head Count
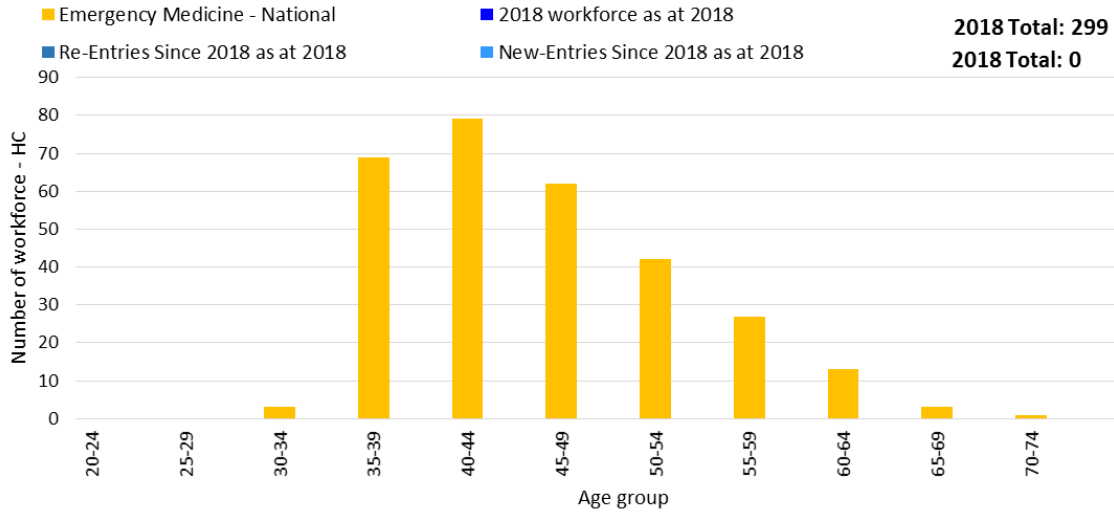
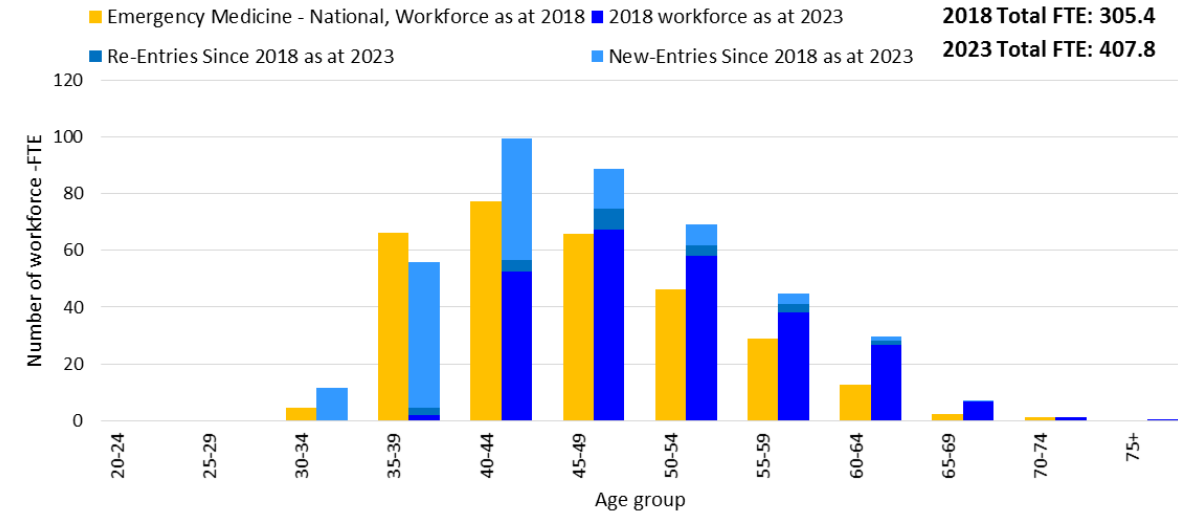■ Emergency Medicine - National   ■ 2018 workforce as at 2018
■ Re-Entries Since 2018 as at 2018   ■ New-Entries Since 2018 as at 2018

2018 Total: 299
2018 Total: 0

National Emergency Medicine Workforce by Age Group - FTE

■ Emergency Medicine - National, Workforce as at 2018 ■ 2018 workforce as at 2018
■ Re-Entries Since 2018 as at 2018   ■ New-Entries Since 2018 as at 2018

2018 Total FTE: 305.4
#N/A
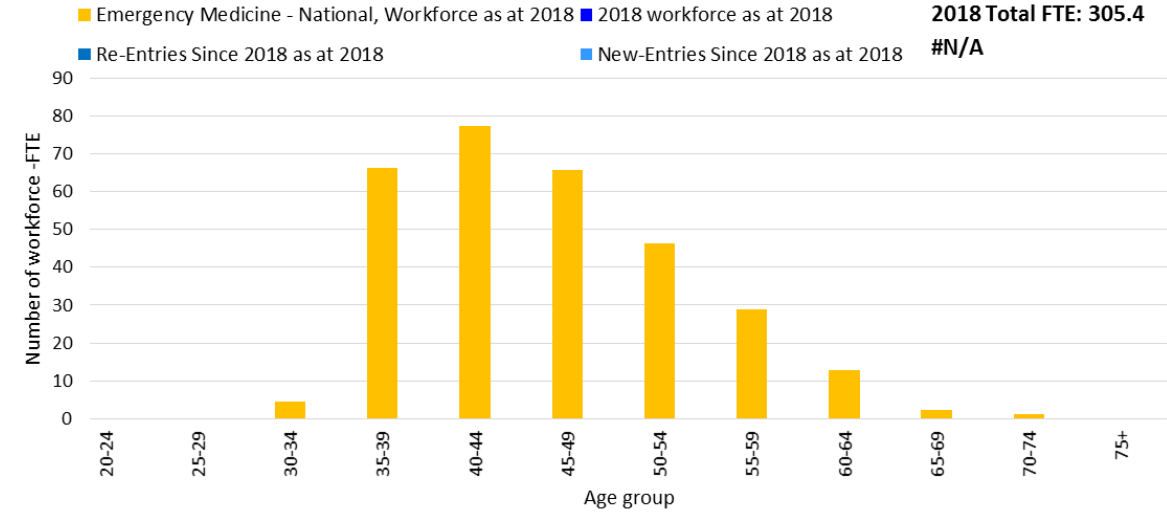
Emergency medicine specialists in 2019

National Emergency Medicine Workforce by Age Group - Head Count
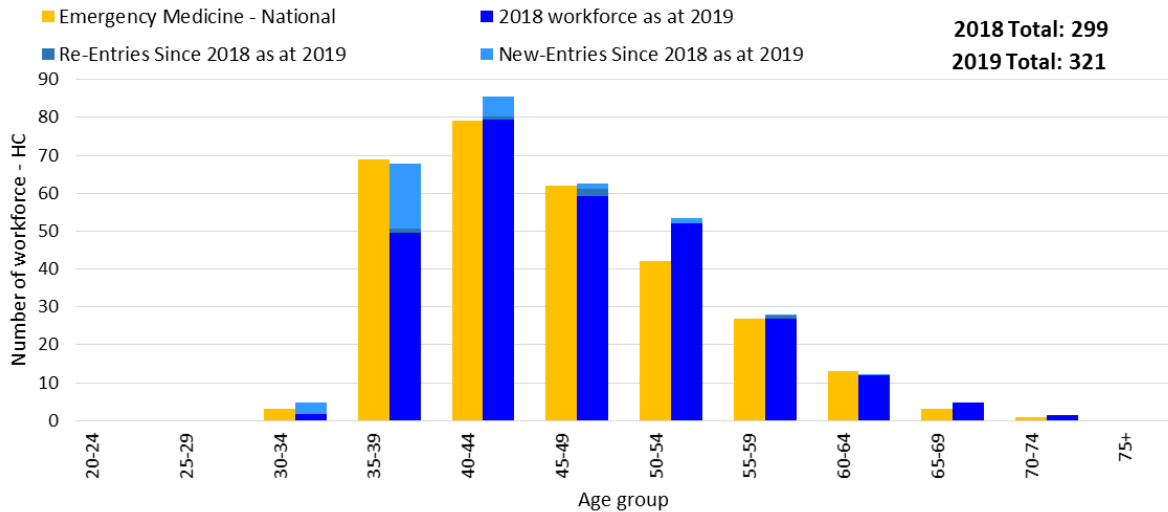
2018 Total: 299
2019 Total: 321

National Emergency Medicine Workforce by Age Group - FTE

2018 Total FTE: 305.4
2019 Total FTE: 328.9
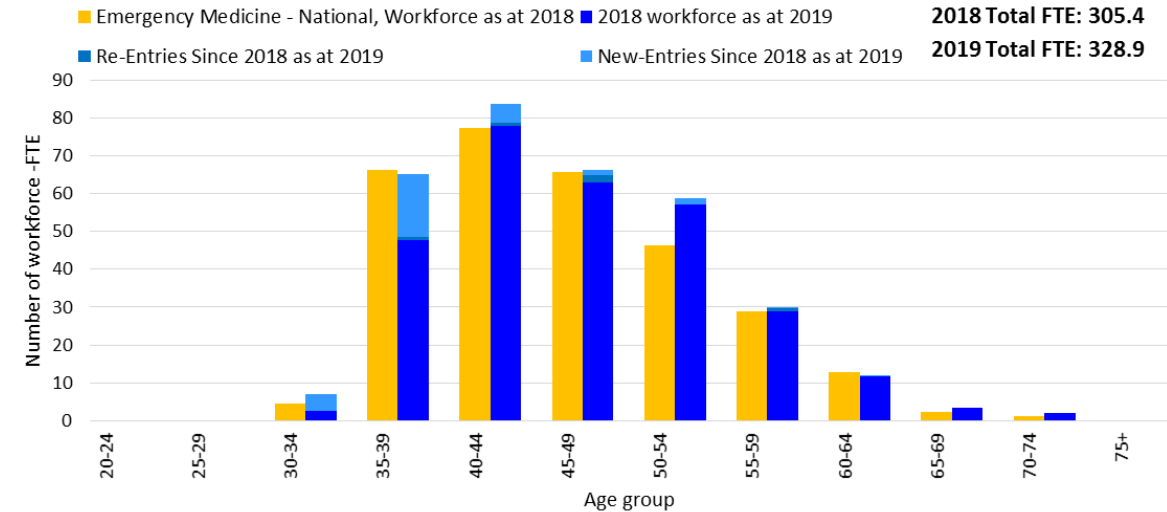
Emergency medicine specialists in 2020

National Emergency Medicine Workforce by Age Group - Head Count
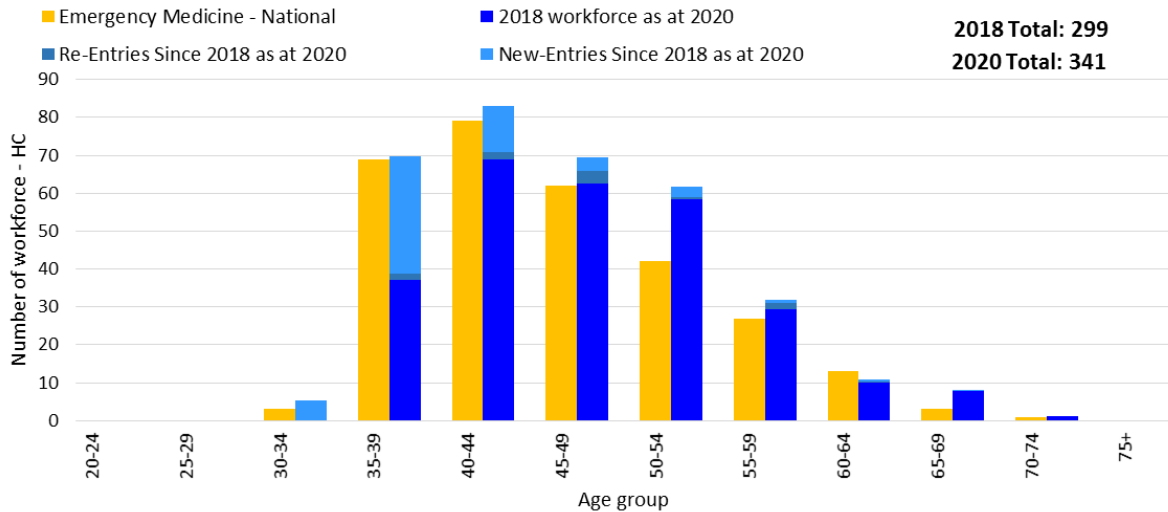
2018 Total: 299
2020 Total: 341

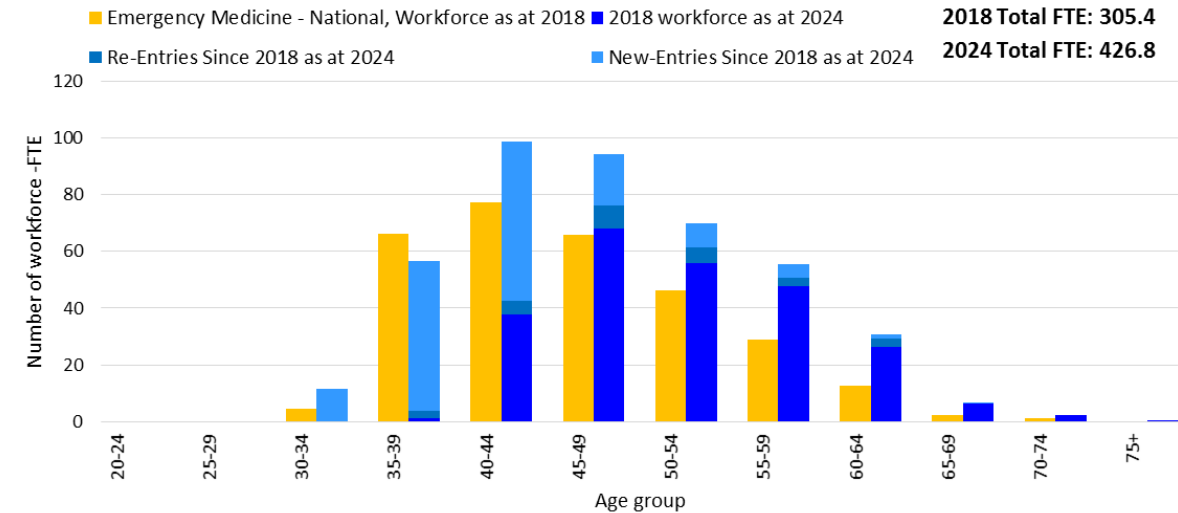National Emergency Medicine Workforce by Age Group - FTE

2018 Total FTE: 305.4
2020 Total FTE: 349.8

Emergency medicine specialists in 2021

National Emergency Medicine Workforce by Age Group - Head Count
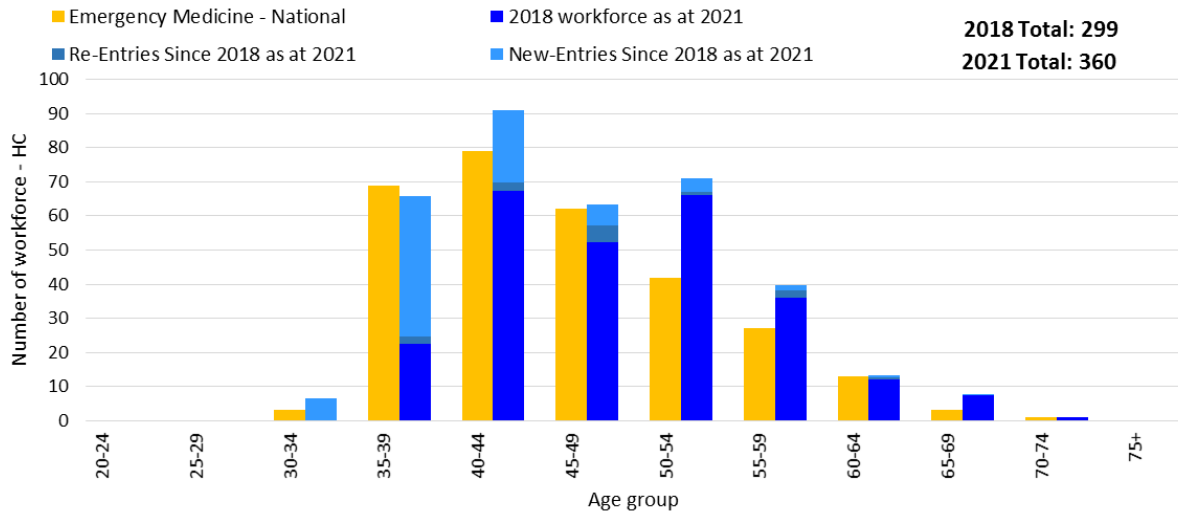
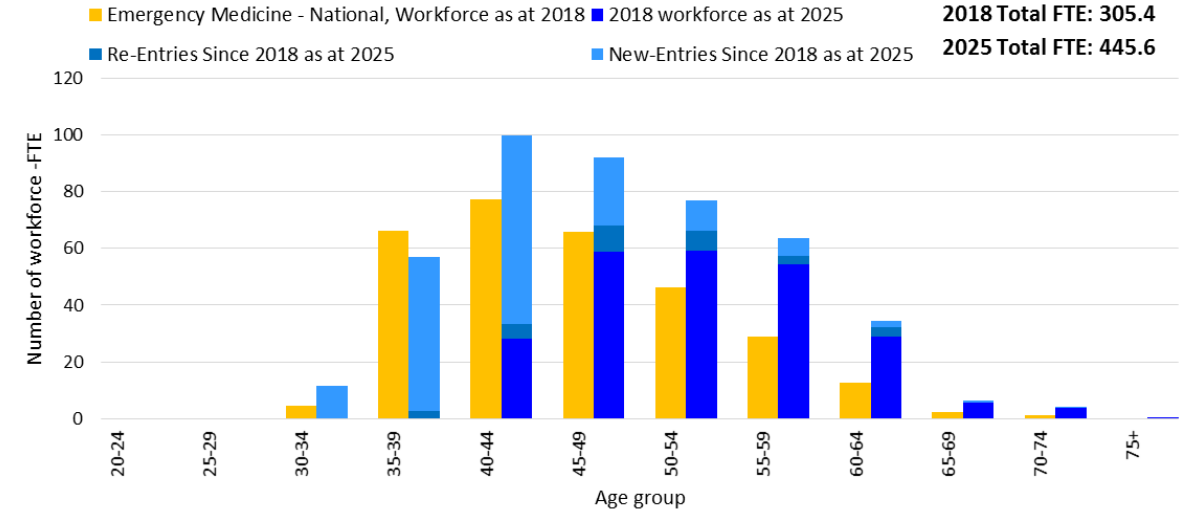■ Emergency Medicine - National ■ 2018 workforce as at 2021
■ Re-Entries Since 2018 as at 2021 ■ New-Entries Since 2018 as at 2021

2018 Total: 299
2021 Total: 360

National Emergency Medicine Workforce by Age Group - FTE

■ Emergency Medicine - National, Workforce as at 2018 ■ 2018 workforce as at 2021
■ Re-Entries Since 2018 as at 2021 ■ New-Entries Since 2018 as at 2021

2018 Total FTE: 305.4
2021 Total FTE: 370.8

Emergency medicine specialists in 2022

National Emergency Medicine Workforce by Age Group - Head Count
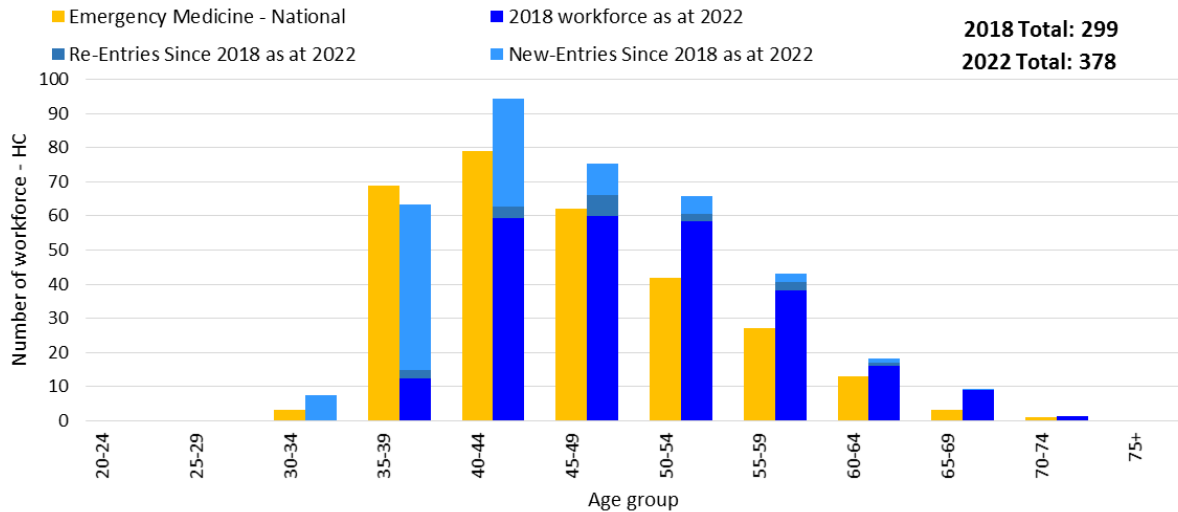
2018 Total: 299
2022 Total: 378

National Emergency Medicine Workforce by Age Group - FTE

2018 Total FTE: 305.4
2022 Total FTE: 389.7

Emergency medicine specialists in 2023

National Emergency Medicine Workforce by Age Group - Head Count
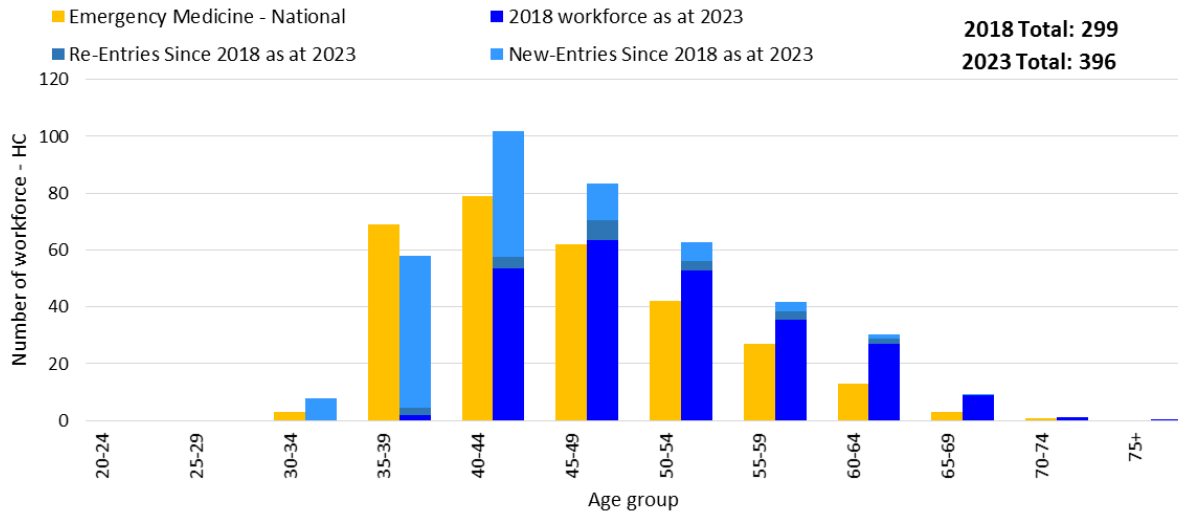
2018 Total: 299
2023 Total: 396

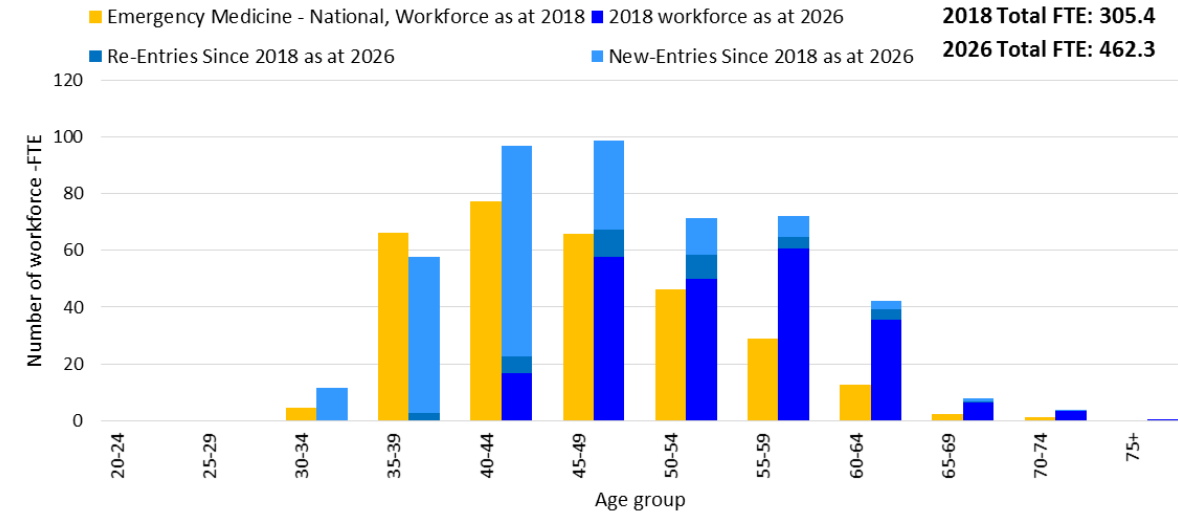National Emergency Medicine Workforce by Age Group - FTE

2018 Total FTE: 305.4
2023 Total FTE: 407.8

Emergency medicine specialists in 2024

National Emergency Medicine Workforce by Age Group - Head Count
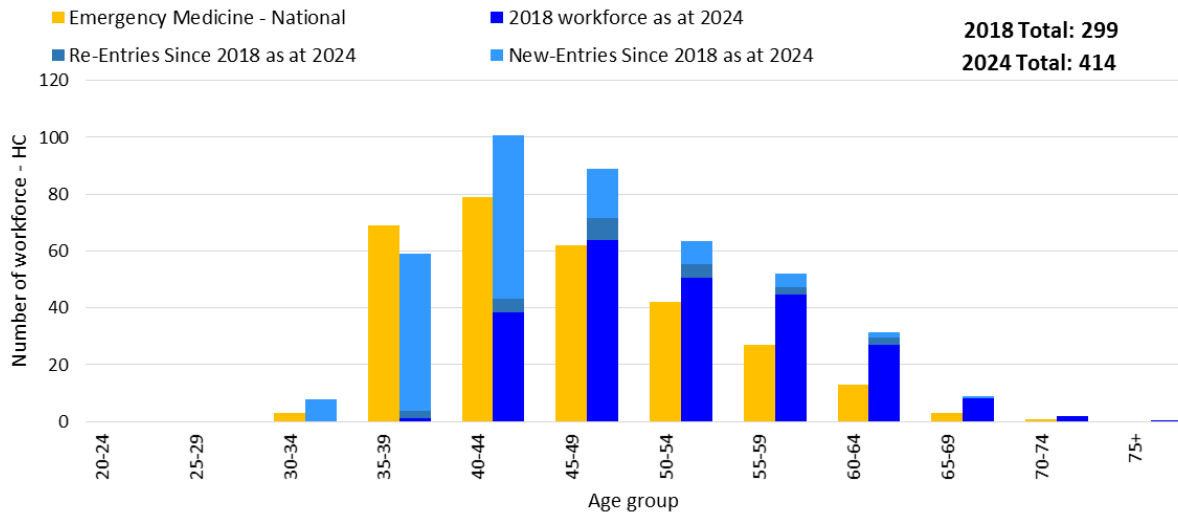
- Emergency Medicine - National
- 2018 workforce as at 2024
- Re-Entries Since 2018 as at 2024
- New-Entries Since 2018 as at 2024

2018 Total: 299
2024 Total: 414

National Emergency Medicine Workforce by Age Group - FTE

- Emergency Medicine - National, Workforce as at 2018
- 2018 workforce as at 2024
- Re-Entries Since 2018 as at 2024
- New-Entries Since 2018 as at 2024

2018 Total FTE: 305.4
2024 Total FTE: 426.8

Emergency medicine specialists in 2025

National Emergency Medicine Workforce by Age Group - Head Count
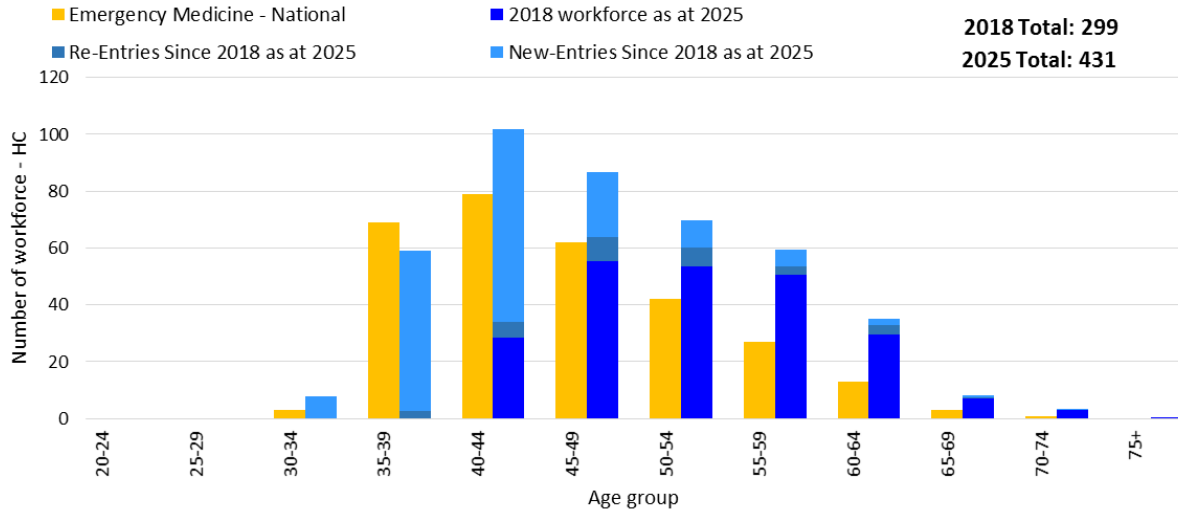
2018 Total: 299
2025 Total: 431

National Emergency Medicine Workforce by Age Group - FTE

2018 Total FTE: 305.4
2025 Total FTE: 445.6

Emergency medicine specialists in 2026

National Emergency Medicine Workforce by Age Group - Head Count
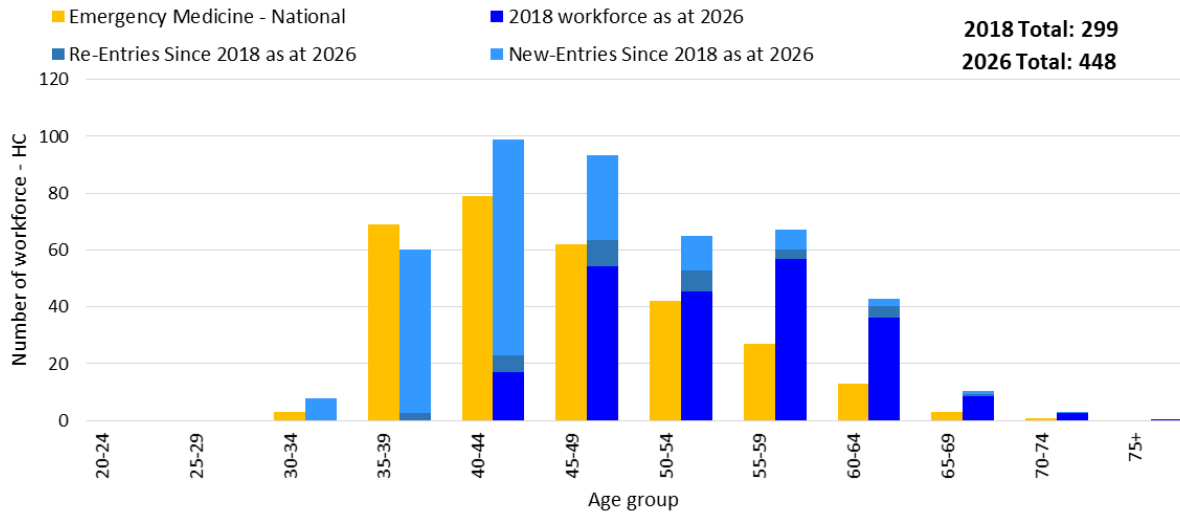
2018 Total: 299
2026 Total: 448

National Emergency Medicine Workforce by Age Group - FTE

2018 Total FTE: 305.4
2026 Total FTE: 462.3

Emergency medicine specialists in 2027

National Emergency Medicine Workforce by Age Group - Head Count
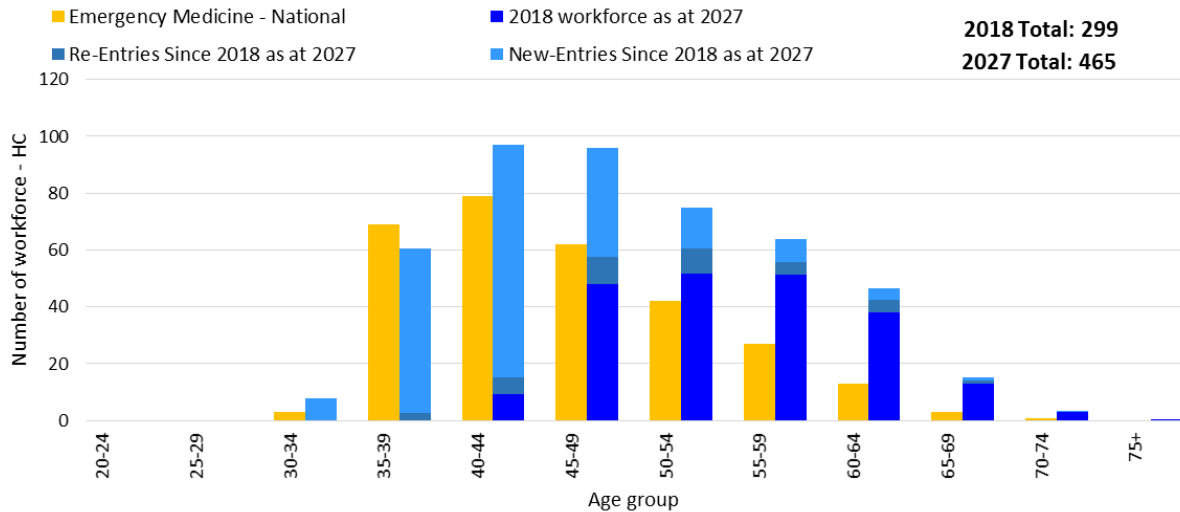
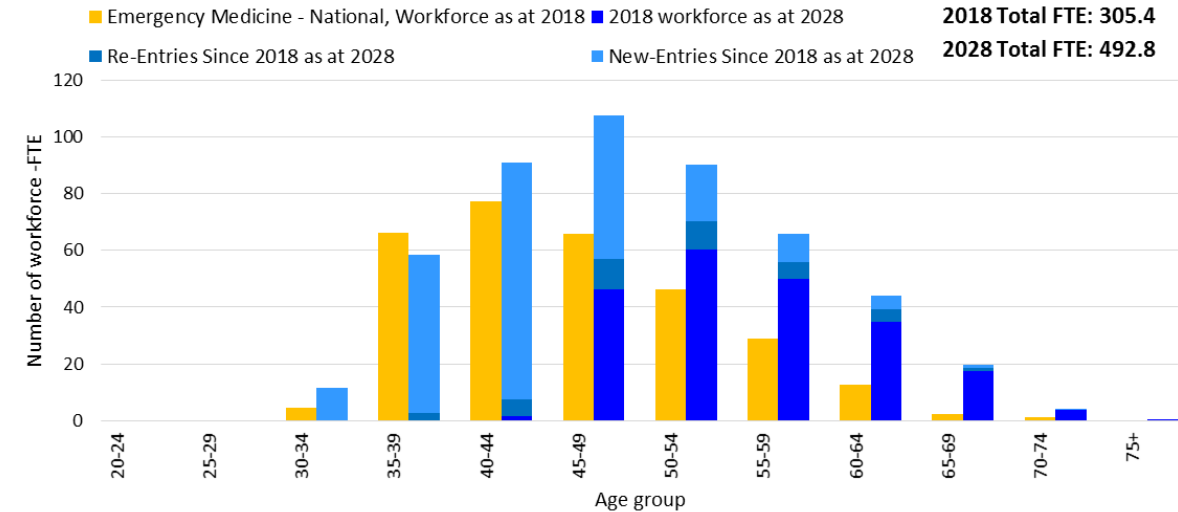National Emergency Medicine Workforce by Age Group - FTE
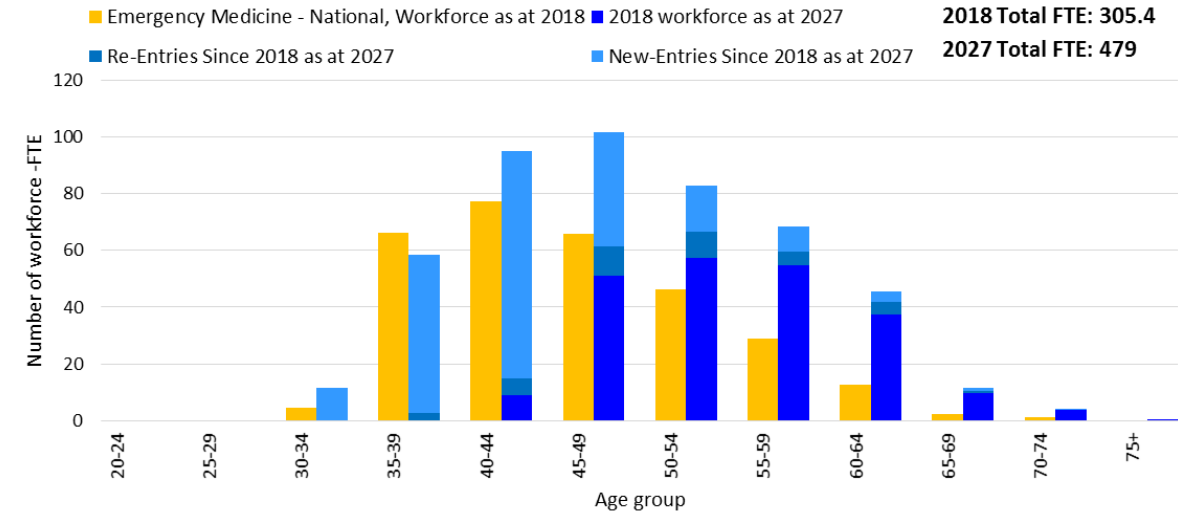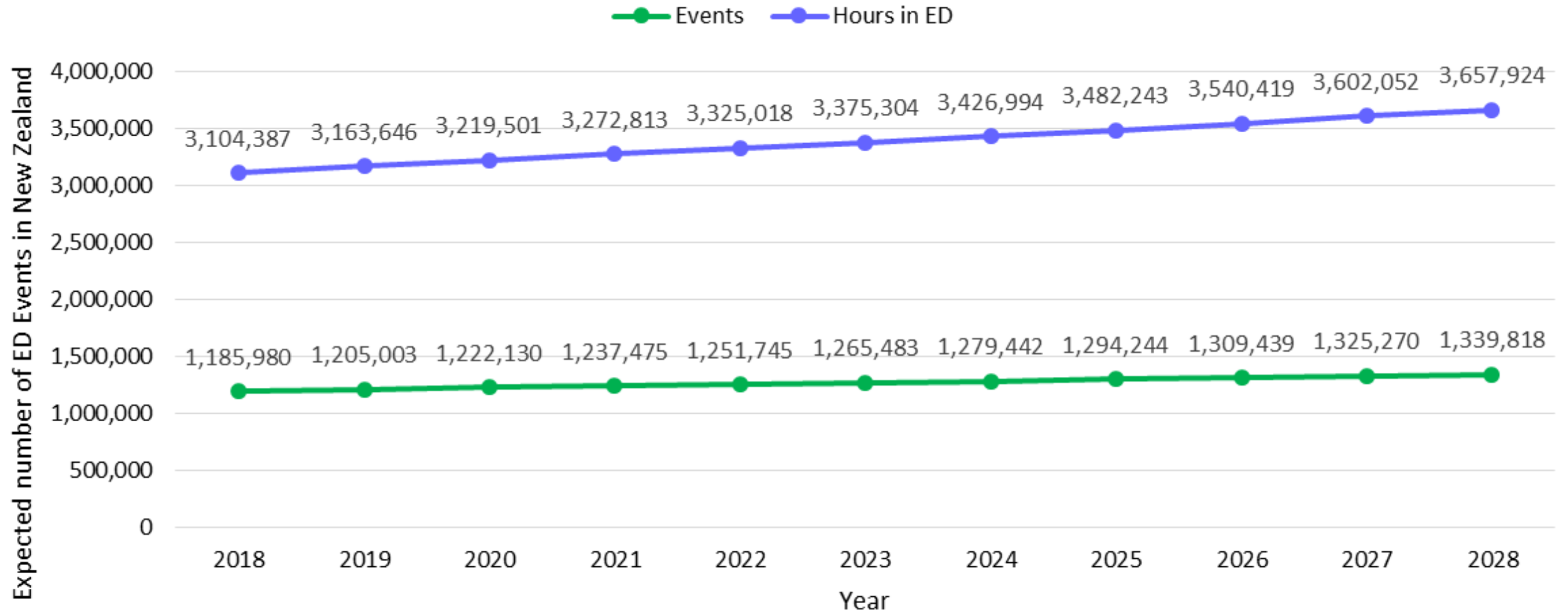
Emergency medicine specialists in 2028

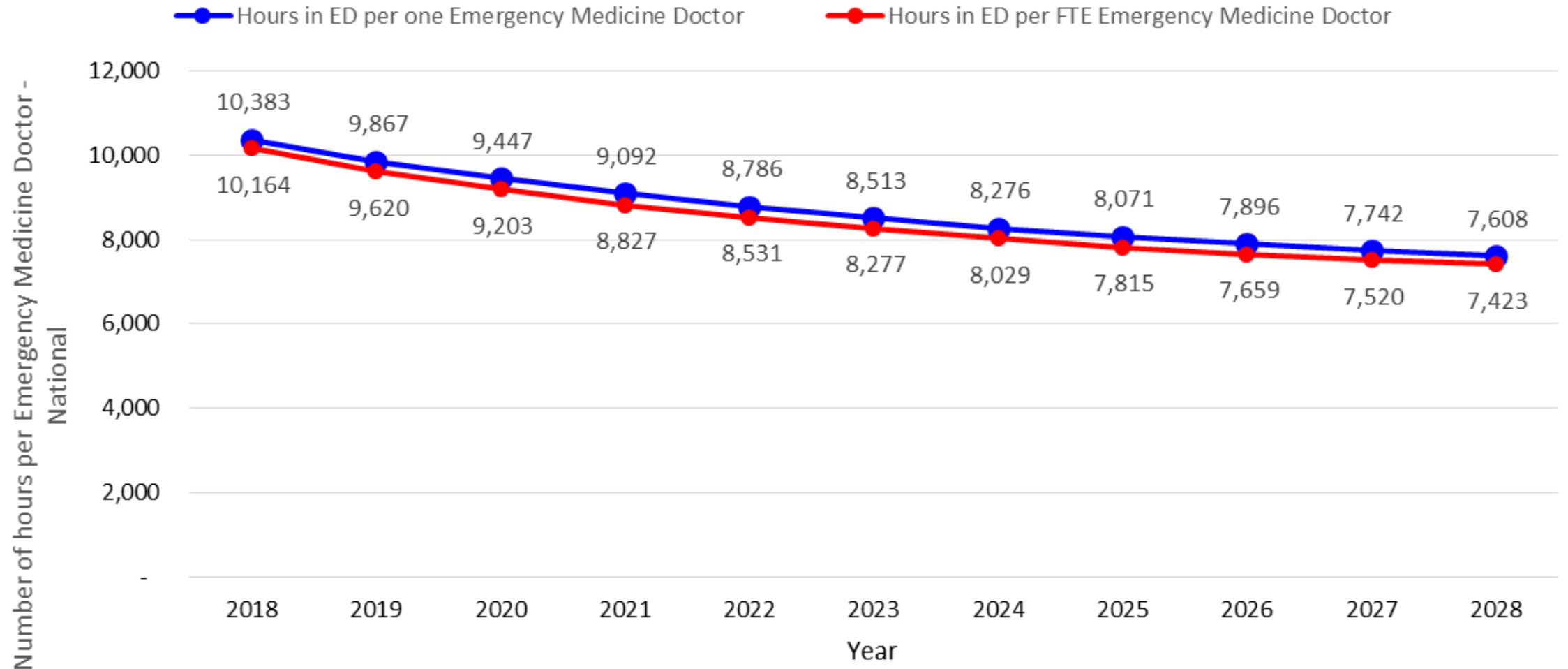National Emergency Medicine Workforce by Age Group - Head Count

2018 Total: 299
2028 Total: 481

National Emergency Medicine Workforce by Age Group - FTE

2018 Total FTE: 305.4
2028 Total FTE: 492.8

Conclusions

- Emergency physicians are aging, but more physicians

- Patients are also ageing and more patients ➜ more workload

Increase in emergency physician capacity **>** **High workloads (current)**
+
Increase in patient demand lead by demographic change