

American College of Radiology Annual Meeting 2022

**Medical Students & Radiology:
Does increased teaching translate
to more Radiologists?**



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of
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No conflicts to declare.

OBJECTIVE

The UK, and the World, has a shortage of Radiologists to meet the increasing demand for radiologic examinations.

To encourage more medical students to consider Radiology as a career, increased exposure at undergraduate level has been advocated.

AIM

To evaluate if formal dedicated
Radiology teaching hours at **Medical School**
had any association with
longitudinal data on
qualified
Radiologists joining the
General Medical Council's (GMC)
Specialist Medical Register
at a National level.

METHOD

•Total number of Doctors joining the GMC Specialist Register as Clinical Radiologists, and those with a primary medical qualifications awarded in Scotland, was obtained from the GMC (2010–2020).

•Graduate numbers from all four Scottish Medical Schools (2000–2011) were also obtained.

•Hours of Radiology teaching for medical schools in Scotland were obtained from validated AToMS study¹.

RESULTS 1

Two hundred and twenty three (6.6%) of 3347 Radiologists added to the GMC Specialist Register between 2010 and 2020 received their primary medical qualifications (PMQ) from Scottish Universities (Table 1).

The number of doctors joining the specialist register from Scottish PMQ Awarding bodies did not change significantly (chi squared trend $p = 0.543$) over the 10 year period (Table 1).

The number of medical students graduating from Scottish Medical schools remained stable with no significant change during 2001–2011 – the period in which this group of Radiologists is likely to have graduated.

	2010 (% of total)	2011 (% of total)	2012 (% of total)	2013 (% of total)	2014 (% of total)	2015 (% of total)	2016 (% of total)	2017 (% of total)	2018 (% of total)	2019 (% of total)	2020 (% of total)	Total (% of total)
Radiologists added to Specialist Register	292	275	291	292	380	292	299	294	298	307	327	3347
Radiologists with Scottish PMQ	22 (7.5)	21 (7.6)	23 (7.9)	23 (7.9)	12 (3.2)	23 (7.9)	12 (4.0)	22 (7.5)	20 (6.7)	21 (6.8)	24 (7.3)	223 (6.7)

RESULTS 2

Table 2. Total number of Medical Students Graduating from Scottish Medical Schools

Year / Medical School	Aberdeen	Dundee	Edinburgh	Glasgow	Total Scottish Graduates
2001	158	131	195	194	678
2002	159	131	239	269	798
2003	183	161	176	256	776
2004	167	137	218	190	712
2005	185	147	252	246	830
2006	176	144	219	250	789
2007	193	159	227	240	819
2008	200	155	261	245	861
2009	171	158	251	243	823
2010	183	152	238	236	809
2011	186	129	230	270	815
Total	1961	1604	2506	2639	8710

RESULTS 3

- There was no association between the number of formal hours Radiology taught to medical students (range 1–30) and the number that joined the specialist register as Radiologists (Table 3).
- In addition, there was no association between total hours taught and the numbers of graduates joining the GMC Radiology specialist register.

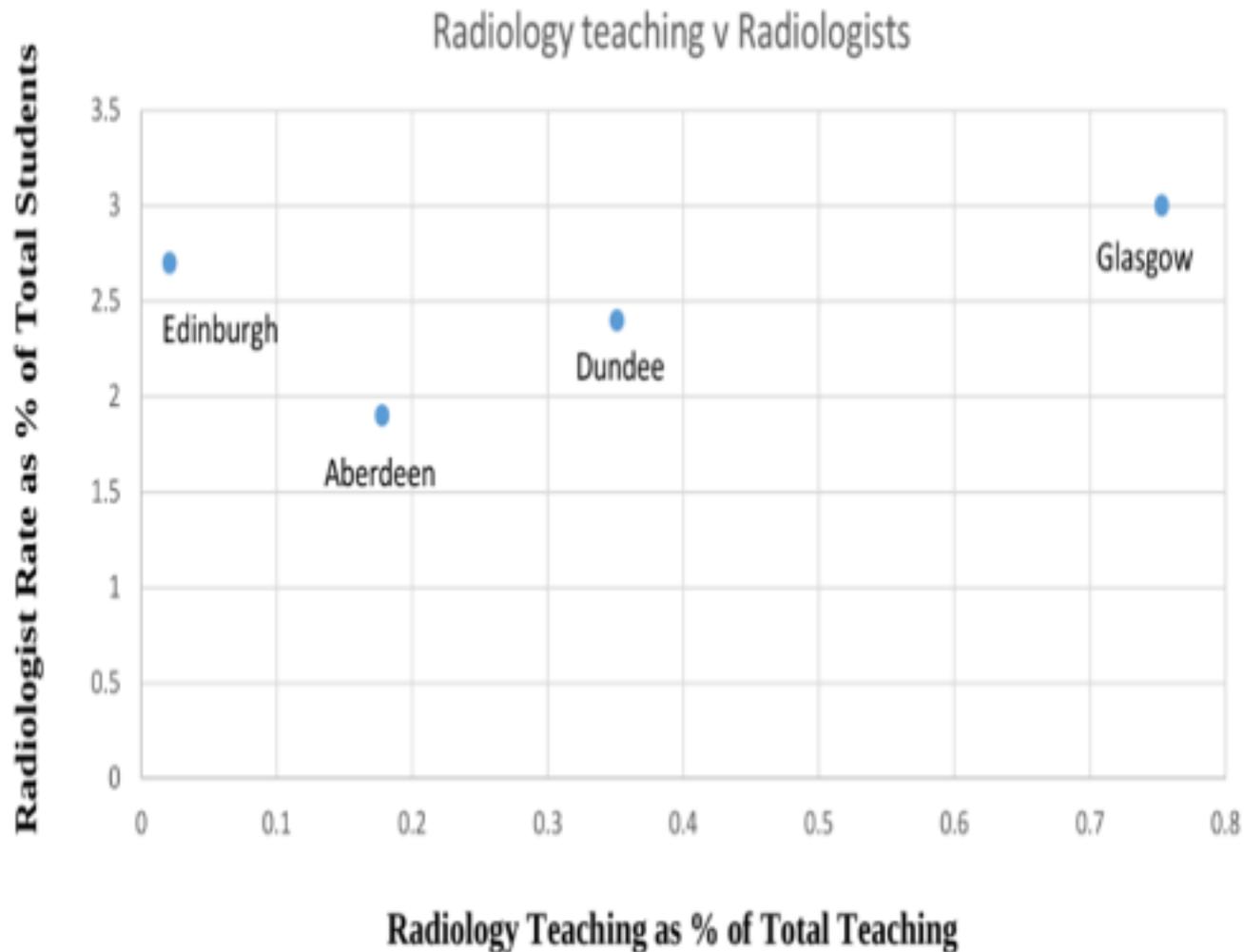
Table 3. Number of Teaching hours correlated to number of Radiologists

Medical School	Total number of Radiologist (2010–2020)	Total number of Students (2001–2011)	Total Radiology Teaching Hours	Total Teaching Hours
Aberdeen	38	1961	9	5069
Dundee	39	1604	19.1	5446
Edinburgh	68	2506	1	4828
Glasgow ^a	78	2639	30	3982

^aGlasgow was the largest medical school with 35% more students on average than Aberdeen, 65% more than Dundee and 5% more than Edinburgh.

RESULTS 4

Figure 1. Percentage Radiology teaching plotted against Radiologist Rate for each University



DISCUSSION 1

- There is apparent face validity to the concept that without any radiology teaching and exposure in medical school, medical students are less likely to consider radiology as a career option and more contact hours could increase interest in Radiology.
- While Europe reports high levels of Radiology input in their medical student curriculum, only about 20% of US medical schools have Radiology clerkships with a similarly low level of Radiology exposure reported for the United Kingdom.
- Radiology foot print in Scottish medical schools is also extremely low at 0.3% of the curriculum hours dedicated to Radiology.

DISCUSSION 2

•There is high interest and rising numbers of applicants for Radiology Resident training posts (Table 5).

Table 5. Number of Applicants per Post in Radiology (2010–2021)

Year	Posts Available	Applicants	Applicants : Post Ratio
2010	185	655	3.54 : 1
2011	183	588	3.21 : 1
2012	167	693	4.14 : 1
2013	210	754	3.59 : 1
2014	229	794	3.47 : 1
2015	244	917	3.76 : 1
2016	249	963	3.87 : 1
2017	267	937	3.51 : 1
2018	282	970	3.44 : 1
2019	278	967	3.48 : 1
2020	311	1128	3.62 : 1
2021	353	1677	4.75 : 1
Mean			3.7 : 1

Source : <https://www.rcr.ac.uk/clinical-radiology/careers-and-recruitment/specialty-recruitment/statistical-summary-previous-rounds>

CONCLUSION

- .More medical school Radiology teaching did not result in more Radiologists.
- . There has been very little change in the number of radiologists produced from Scottish Medical Schools, and indeed across the United Kingdom, over the last decade.
- .In the face of massive shortage of radiology workforce, urgent work is needed to address this issue as a matter of patient safety

References

1. Devine OP, Harborne AC, Horsfall HL, Joseph T et al. The analysis of teaching of medical schools (AToMS) survey: an analysis of 47,258 timetabled teaching events in 25 UK medical schools relating to timing, duration, teaching formats, teaching content, and problembased learning. BMC Med 2020; 18: 126. <https://doi.org/10.1186/s12916-020-01571-4>.
2. Chew C, O'Dwyer PJ, Young D. Radiology and the medical student: do increased hours of teaching translate to more radiologists? BJR Open 2021; 3: 20210074.