EFRS | EUROPEAN FEDERATION OF RADIOGRAPHER SOCIETIES

REPORT

Results of the EFRS 2020 Annual Survey

Educational Wing Members

December 2020

Index

Abbreviations

MI - Medical Imaging

NM - Nuclear Medicine

NR - No Response

RT - Radiotherapy

1. Introduction

This report details the results of the third survey, sent to the Educational Institutions (Affiliate Members) of the European Federation of Radiographer Societies (EFRS) and was prepared by Dr. Andrew England (Chair, EFRS Educational Wing Management Team) with input from Dr. Jonathan McNulty (EFRS President), Charlotte Beardmore (EFRS Vice-President), and Dorien Pronk-Larive (EFRS Past-CEO).

2. Results

2.1 Institutional Details of Respondents

42 out of 62 (65.6%) Educational Institutions who were EFRS Affiliate Members completed this survey between December 2019 and February 2020 (**Figure 1**). This is a slightly smaller response than was received for the 2017 survey in which 52 Institutions responded but comparable to the 2015 survey (n=41). Responses were received from the following Educational Institutions spanning 19 countries (**Table 1**).

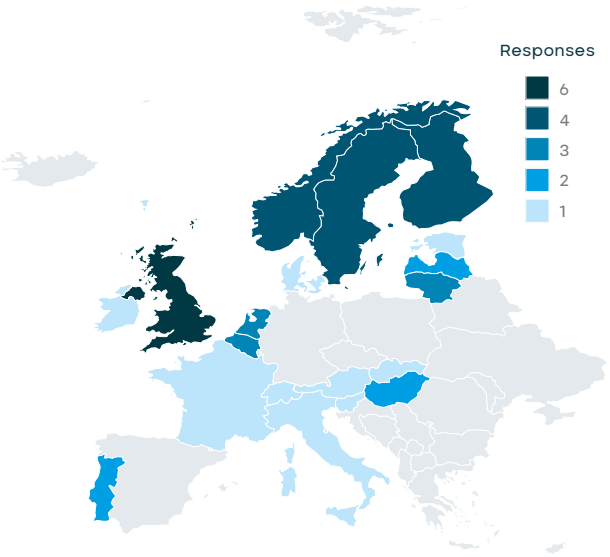

Figure 1. Countries responding to the 2020 EFRS Education Survey.

Table 1. Summary of the responding institutions.

Country	Institution
Austria	FH Campus Wien
Belgium	Haute Ecole de la Providence de Liege
Belgium	Haute Ecole Vinci
Belgium	Odisee UoAS
Denmark	University College Lillebelt
Estonia	Tartu Health Care College
Finland	Oulu UoAS
Finland	Metropolia UoAS
Finland	Tampere UoAS
Finland	Savonia UoAS
France	Lycée Charles Carnus
Hungary	Semmelweis University
Hungary	University of Pécs
Ireland	University College Cork
Italy	Università di Bologna
Latvia	University of Latvia
Latvia	Latvijas Universitātes P. Stradiņa Medicīnas Koledža
Lithuania	Kauno Kolegija
Lithuania	Klaipeda University
Lithuania	Vilniaus Kolegija UoAS
Malta	University of Malta
Netherlands	Hanze UoAS
Netherlands	InHolland UoAS
Netherlands	Fontys UoAS
Norway	University College of South-Eastern Norway
Norway	OsloMet
Norway	NTNU Gjøvik
Norway	NTNU Trondheim
Portugal	Universidade do Algarve - Escola Superior de Saúde
Portugal	Escola Superior de Tecnologia da Saúde de Coimbra
Slovakia	University of Presov
Slovenia	University of Ljubljana
Sweden	Jöngköping School of Health & Welfare
Sweden	Lund University
Sweden	Karolinska Institutet
Sweden	Örebro University
Switzerland	UoAS Western Switzerland
United Kingdom	University of Derby
United Kingdom	University of Salford
United Kingdom	London Southbank University
United Kingdom	Robert Gordon University
United Kingdom	University of Ulster
United Kingdom.	University of Exeter

2.2 Radiography Education

Q1. Please specify the primary area(s) of professional practice included in the initial radiographer education curriculum in your country (medical imaging includes basic knowledge of ultrasound, CT, MR / select all options that apply in your country).

All 42 Institutions responded to this question. The majority of Institutions, 67.0% (n=28), offer a combined Medical Imaging (including Nuclear Medicine) and a Radiotherapy programme. A dedicated Medical Imaging only programme is offered by 29.0% (n=12) Institutions, a dedicated programme for Radiotherapy is offered by 10.0% (n=4) Institutions and a dedicated Nuclear Medicine only programme is offered by 2.0% (n=1) Institutions. There were no Institutions reporting programmes with combined Medical Imaging (excluding Nuclear Medicine) and Radiotherapy. Four institutions responded that their programmes (10.0%) fell into the 'other categories which were: 'Combined Medical Imaging (including Nuclear Medicine) but no Radiotherapy (n=2)' & 'Ultrasound training (n=2)'. It should be noted that responses were comparable to the 2017 Education Survey.

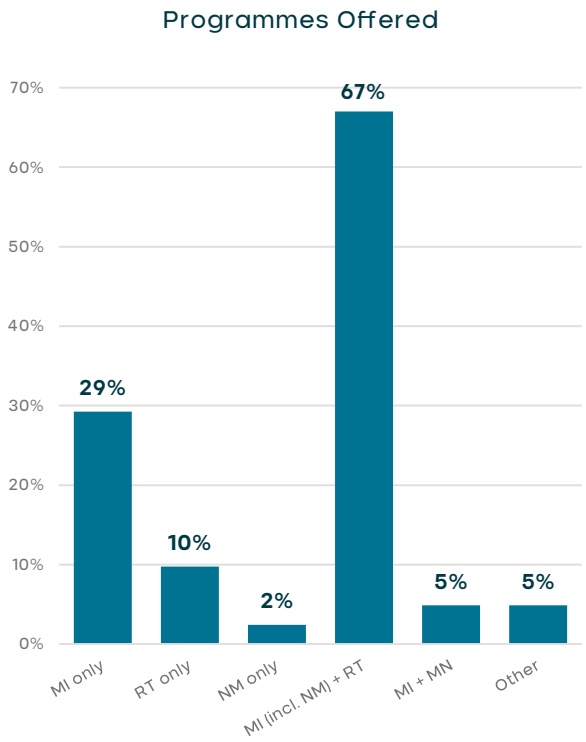

Figure 2. Types of Programmes Offered by Responding Educational Institutions

Details of results by country

The institutions (n=28) offering a combined Medical Imaging (including Nuclear Medicine) and a Radiotherapy programme were from the following countries: Austria, Belgium, Estonia, Finland, France, Hungary, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Portugal, Slovenia and Switzerland.

Institutions (n=12) offering a dedicated Medical Imaging only programme were from the following countries: Denmark, Ireland, Latvia, Norway, Sweden and the UK. Institutions (n=4) offering a dedicated Radiotherapy only programme were from Denmark and the United Kingdom (UK). The Institution (n=1) offering a dedicated Nuclear Medicine programme was from Denmark.

2.3 Combined Programmes

Q2. For 'Combined' programmes, are graduates fully qualified to start practice in all the areas that are included in the combined curriculum?

Responses were received from 28 respondents. 78.6% (n=22) replied 'Yes' graduates are fully qualified to practice in all the areas included in the combined curriculum and 21.4% (n=6) replied 'No'. Countries replying 'Yes' stating graduates are fully qualifies to practice in all areas were from Austria, Belgium, Finland, France, Hungary, Italy, Latvia, Lithuania, Malta, Netherlands, Portugal, Slovenia and Switzerland and the respondents replying 'No' came from Belgium, Estonia and Norway.

Q3. If you answered NO to the above question, before working with patients graduates need?

There were four respondents who answered 'No' to Question 3, reporting that graduates were required to undertake compulsory additional courses (via a certificate or diploma) in radiotherapy (Belgium, Estonia and Norway). One respondent (Belgium) also indicated that graduates were required to undertake additional clinical practice in radiotherapy. Two respondents (Estonia and Norway) indicated that graduates were required to undertake compulsory additional courses with (via a certificate or diploma) in nuclear medicine.

Q4. Do graduates of combined programmes have the opportunity of being employed in a combined role, i.e. working in both Medical Imaging and Radiotherapy or Nuclear Medicine and Radiotherapy, or must they choose one area?

Responses were received from 28 Institutions. 21 (75.0%) reported that being employed in a combined role was possible and 7 (25.0%) Institutions reported that graduates must choose one area. Responses were indifferent from the 2017 Education Survey.

Institutions (n=21) reporting that being employed in a combined role was possible were from the following countries: Austria, Belgium, France, Finland, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Portugal, Slovenia and Switzerland. Institutions (n=7) reporting that graduates must choose one area were from Belgium, Estonia, Hungary, Portugal and Slovakia.

2.4 Educational level and duration

Q5. Please indicate the structure of the initial radiographer education curriculum in your country (select all that apply).

42 responses were received for this question. The overall majority, 37 (88.1%) indicated that the structure of initial radiographer education was formal higher education at EQF Level 6 (Bachelor degree). Three (7.1%) responses indicated that Education and Training was at EQF Level 5, two (4.8%) indicated that Vocational Education was at EQF Level 6. Three (7.1%) reported that this was at Masters level (Level 7), these Institutions were from Ireland and the UK. Results were again similar to the 2017 Education Survey.

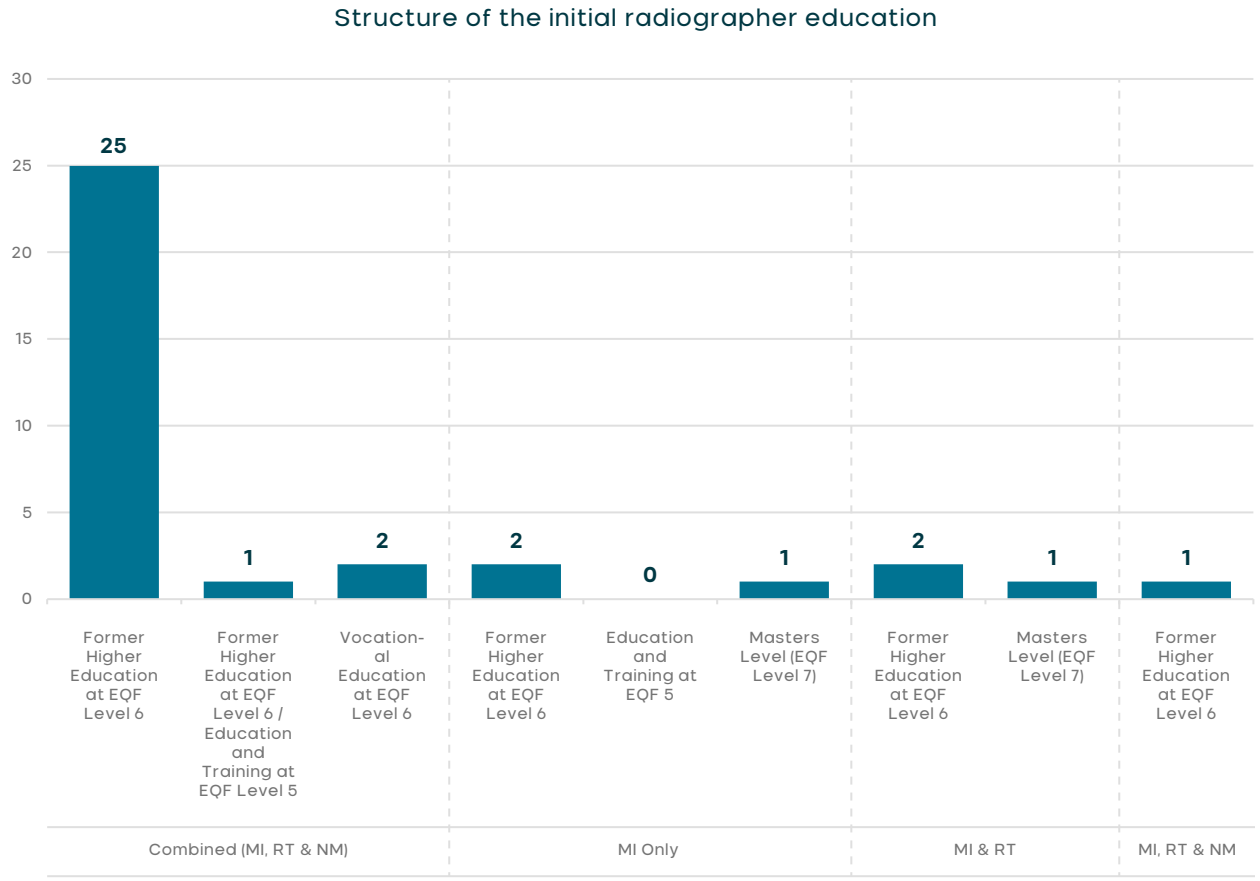

Figure 3. Details of the educational level offered by Programme Type

Details of results by country

Institutions reporting (n=37) that the structure of initial radiographer education was formal higher education at EQF Level 6 (Bachelor's degree) were from Austria, Belgium, Denmark, Estonia, Finland, France, Hungary, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Portugal, Slovenia, Sweden, Switzerland and the UK. Institutions reporting (n=2) that Education and Training was at EQF Level 5 were from Hungary and Latvia.

Table 2. Summary of Programme Type and Level according to Institution / Country

Country	Institution	Combined MI (incl. NM) and a RT Prog.	Dedicated MI Prog.	Dedicated RT Prog.	Dedicated NM Prog.	Other	Structure of initial radiographer education:
Austria	FH Campus Wien	x					FHE EQF 6
Belgium	Haute Ecole de la Providence de Liege	x					FHE EQF 6
Belgium	Haute Ecole Vinci	x					VE EQF 6
Belgium	Odisee UoAS	x					FHE EQF 6
Denmark	University College Lillebelt		x	x	x		FHE EQF 6
Estonia	Tartu Health Care College	x					FHE EQF 6
Finland	Oulu UoAS	x					FHE EQF 6
Finland	Metropolia UoAS	x					FHE EQF 6
Finland	Tampere UoAS	x					FHE EQF 6
Finland	Savonia	x					FHE EQF 6
France	Lycee Charles Carnus	x					FHE EQF 6
Hungary	Semmelweis University	x					FHE EQF 6
Hungary	University of Pecs	x					FHE EQF 6 & ET EQF 5
Ireland	University College Cork		x	x			FHE EQF 7
Italy	Universita di Bologna	x					FHE EQF 6
Latvia	University of Latvia		x				Qu. skipped
Latvia	P. Stradins medical college University of Latvia	x					FHE EQF 6
Lithuania	Kauno Kolegija	x					FHE EQF 6
Lithuania	Klaipeda University	x					FHE EQF 6
Lithuania	Vilniaus Kolegija UoAS					x	FHE EQF 6
Malta	University of Malta	x					FHE EQF 6
Netherlands	Hanze UoAS	x					FHE EQF 6
Netherlands	InHolland UoAS	x					FHE EQF 6
Netherlands	Fontys UoAS	x					FHE EQF 6
Norway	University College of South-Eastern Norway	x					FHE EQF 6
Norway	OsloMet		x				FHE EQF 6
Norway	NTNU Gjøvik	x					FHE EQF 6
Norway	NTNU Trondheim	x					FHE EQF 6
Portugal	Universidade do Algarve – Escola Superior da Saúde	x					FHE EQF 6
Portugal	Escola Superior de Technologia da Saúde de Coimbra	x					FHE EQF 6
Slovakia	University of Presov	x					FHE EQF 6
Slovenia	University of Ljubljana	x					FHE EQF 6
Sweden	Jönköping School of Health & Welfare		x				FHE EQF 6
Sweden	Lund University		x				FHE EQF 6
Sweden	Örebro University		x				FHE EQF 6
Switzerland	UoAS Western Switzerland	x					FHE EQF 6
UK	University of Derby		x				FHE EQF 6 & FHE EQF 7
UK	University of Salford		x				FHE EQF 6
UK	London Southbank University		x	x			FHE EQF 6 & ET EQF 5
UK	Robert Gordon University		x				FHE EQF 6
UK	University of Ulster		x				FHE EQF 6
UK	University of Exeter		x	x			FHE EQF 6

MI, medical imaging; RT, radiotherapy; NM, nuclear medicine; Prog. Programme; FHE EQF 6, Formal higher education at EQF 6; ET EQF 5, Education and Training EQF 5; VE EQF 6, Vocational Education at EQF 6; UK, United Kingdom.

Institutions reporting (n=2) that Vocational Education was at EQF Level 6 were from Belgium and Lithuania.

Q6. Please indicate the number of European Credit Transfer and Accumulation System (ECTS) credits of the initial radiographer education curriculum (for UK institutions 10 ECTS = 20 UK credits).

Forty responses were received for this question. Twenty-three respondents (57.5%) indicated that their programmes have 180 ECTS, seven (17.5%) programmes have 210 ECTS and nine (22.5%) programmes have 240 ECTS. Two respondents, from the UK and Lithuania did not report any credits allocated, a HEI from Ireland reported 120 credits as part of a Level 7 programme. Responses were similar to the 2017 Education Survey.

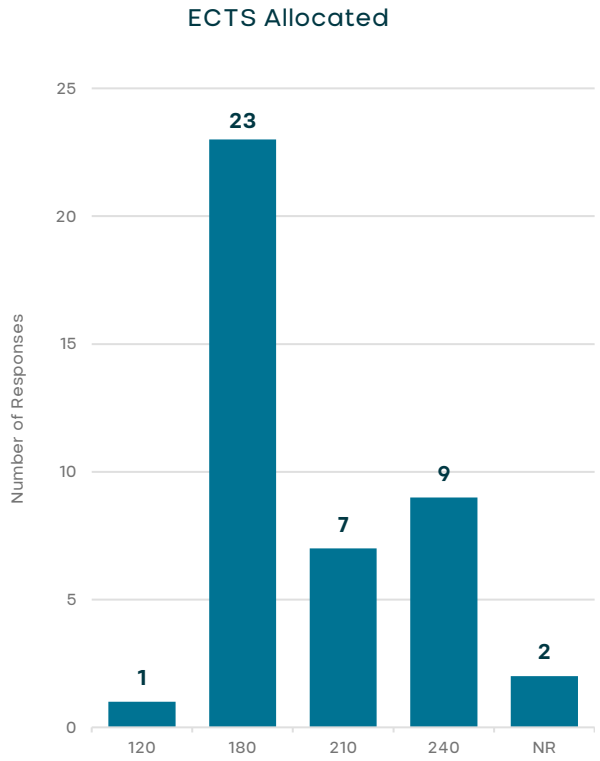

Figure 4. Frequency of ECTS allocated for an Educational Programme

Details of results by country

Institutions reporting (n=23) that their programmes have 180 ECTS were from Austria, Belgium, France, Italy, Latvia, Luthuania, Norway, Slovakia, Slovenia, Sweden, Switzerland and the UK. Institutions reporting (n=7) that their programmes have 210 ECTS were from Denmark, Estonia, Finland and Luthuania. Institutions reporting (n=9) that their programmes have 240 ECTS were from Hungary, Latvia, Malta, Netherlands and Portugal. A single Institution in Ireland indicated that their programme was for 120 ECTS.

Q7. Please explain how many student effort / activity hours are assigned for 1 ECTS in your institution.

39 Institutions responded to this question. The range of student effort hours per 1 ECTS was between 20 hours to 30 hours. Eleven Institutions (28.9%) allocate 27 student effort hours per ECTS, 10 Institutions (26.3%) allocate 25 hours, 7 (18.4%) Institutions allocate 30 hours, 6 (15.8%%) Institutions allocate 28 hours, 2 (5.3%) Institutions allocate 26 hours, 2 Institutions (5.3%) allocate 20 student effort hours and 1 Institution (2.6%) for 1 ECTS. Trends were relatively similar to those reported in the 2017 Education Survey, except the modal response had switched from 25 hours in 2017 to 27 hours in 2020.

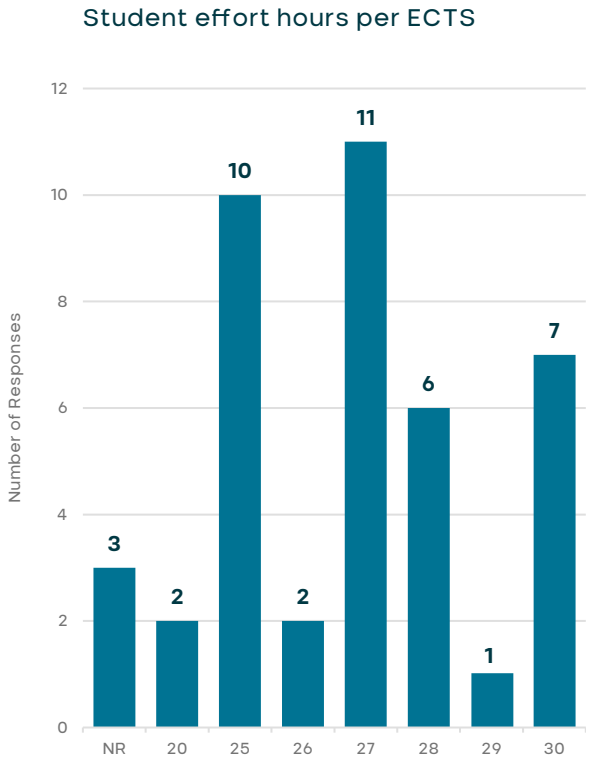

Figure 5. A summary of the student effort hours typically assigned to a single ECTS credit

Table 3. Summary of the student effort required for a single ECTS credit

Number of student effort hours per 1 ECTS	Country of origin of Institution
20 hours per ECTS (n=2)	UK
25 hours per ECTS (n=10)	Austria, France, Ireland, Italy, Latvia, Lithuania, Malta, Slovakia, Sweden, UK
26 hours per ECTS (n=1)	Latvia
27 hours per ECTS (n=11)	Finland, Lithuania, Norway, Sweden, UK
28 hours per ECTS (n=6)	Belgium, Netherlands, Portugal
29 hours per ECTS (n=1)	Norway
30 hours per ECTS (n=7)	Belgium, Denmark, Hungary, Slovenia, Switzerland

Q8. Please indicate the normal total duration, in years, of the initial (basic) radiography education programme in your country:

40 Institutions responded to this question. The majority of programmes, 22 (55.0%) are 3 years in duration, 9 (22.5%) 4 years in duration and 7 programmes (17.5%) are 3.5 years in duration. Two (5.0%) Institutions indicated that their programmes are 2 years in duration.

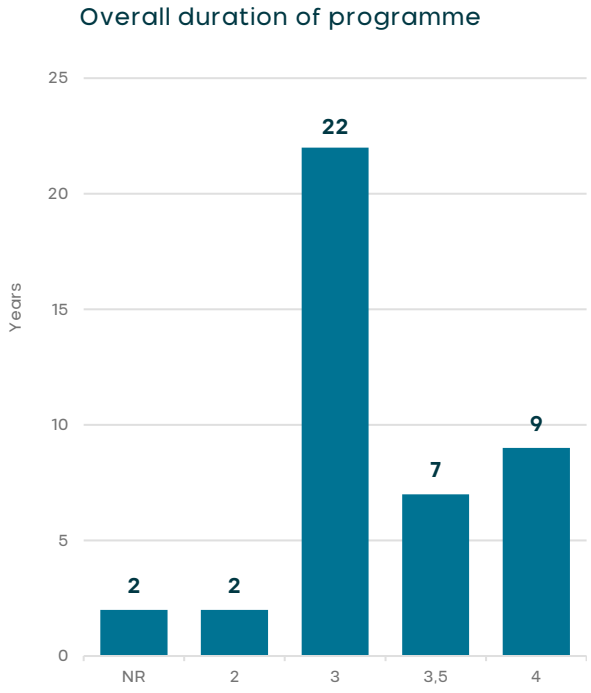

Figure 6. A summary of the overall duration of Programmes

The countries where programmes are 3 years in duration are Austria, Belgium, France, Germany, Italy, Latvia, Lithuania, Norway, Slovakia, Switzerland and UK. The countries where programmes are 3.5 years in duration are Denmark, Estonia, Finland and Lithuania.

The countries where programmes are 4 years in duration are Hungary, Latvia, Malta, Netherlands and Portugal. The two Institutions with a 2-year programme are in the UK and Ireland.

Two-year programmes were seen once in 2015, were absent in 2017 and a feature of this Survey and reflected the introduction of pre-registration EQF Level 7 courses, where a previous Bachelor's degree is typically and entry requirement.

2.5 Student Numbers

Q9. How many students started their first year of their initial radiography education programme in 2019 in your institution?

40 Institutions responded to this question. The range of student intake numbers varied between an intake of 12 students through to an intake of 276 students. The student intake range had increased from the 2017 Survey (10 to 180 students). The majority of student intakes were in the 26 to 50 student number range 40.0% (n=16). 23 Institutions had an intake of less than 50 students (57.5%), 9 Institutions had between 51 to 75 student intake (22.5%) and 5 (12.5%) Institutions had an intake larger than 100 students per intake. These relative proportions were similar to the results in the 2017 Survey.

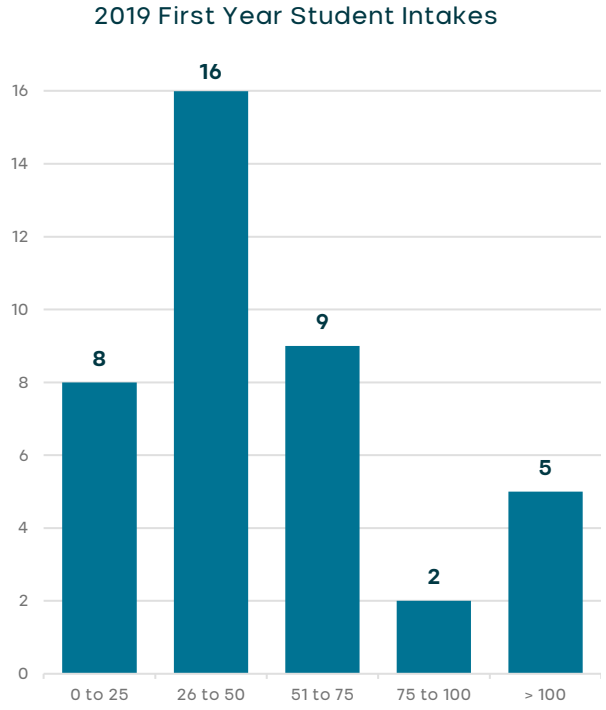

Figure 7. Student in-take numbers for the 2019 academic years

Q10. Approximately what percentage of any intake would you expect to normally qualify (e.g. 100%, 95%, 90%, etc.)?

39 responses were received to this question. The range of percentages of students normally expected to qualify ranged between 30% to 98% and was unchanged from 2017. 20 (51.3%) of Institutions normally expect 75% to 100% of students to qualify, 13 (33.3%) Institutions normally expect 51% to 75% of students to qualify and 6 (15.4%) Institutions normally expected 50% of less to qualify. Again, these relative proportions were unchanged from the 2017 Survey.

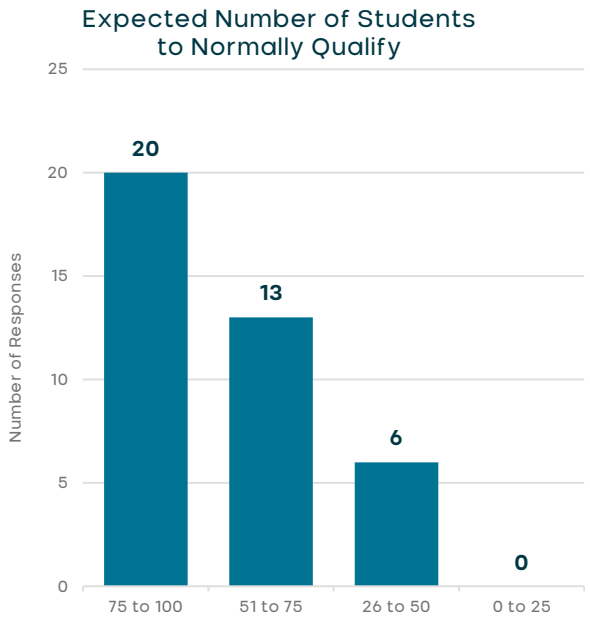

Figure 8. Expected number of students who are expected to qualify

Q11. How many students do you expect to graduate in 2019?

40 responses were received to this question. The numbers of students expected to graduate in 2019 ranged from 8 up to 120 students. 12 (30.0%) Institutions expect less than 26 students to graduate, 21 (52.5%) Institutions expect between 26 to 50 to graduate and 2 (5.0%) Institutions expect between 51 to 75 students to graduate. Three (7.5%) Institutions expected 76 to 100 students to graduate and two (5.0%) Institutions greater than 100 students are expected to graduate. A slight increase was noted from the 2017 Survey, here 53% of Institutions expected less than 30 students to graduate where from the 2020 data this number was lower. The modal response from the 2020 data was that around half of the responding Institutions expected between 26 to 50 students to graduate.

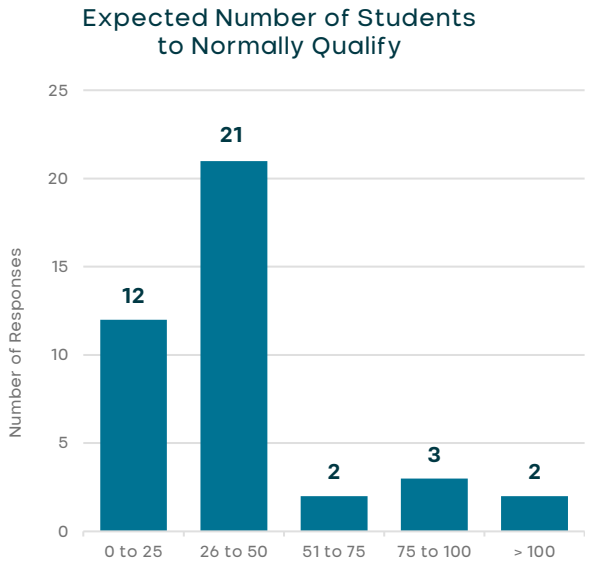

Figure 9. Expected numbers of students expected to graduate in 2019

2.6 Programme Accreditation

Q12. What level of accreditation of your radiography programme is compulsory? (accreditation is defined as the formal review of a programme against specific set standards)

41 responses were received to this question. 35 (85.4%) Institutions reported their programmes were accredited through National accreditation, 10 (24.4%) through Institutional accreditation and four (9.8%) through International accreditation. These figures were similar to those reported in the 2017 Survey.

2.7 Practical Training

Q13. Does your institution have clinical skills labs? (in a skills lab students learn skills and gain confidence in a simulated and supervised university or hospital setting where the student can become familiar with a procedure and develop the required skills before working with real patients).

40 responses were received to this question. 36 (90.0%) Institutions have a clinical skills lab and only four (10.0%) reporting that they don't have a clinical skills lab. These figures are similar to those presented in both the 2015 and 2017 Surveys.

Q14. What is the total amount of practical training, in ECTS, for the student in the skills lab and in clinical practice during the whole period of education and training? (If you do not use ECTS, please translate the number of hours into ECTS with one ECTS credit generally corresponds to approximately 25 hours of work, including all study activities/assessments)

40 responses were received to this question. The total amount of practical training, in ECTS, for the students in the skills lab and in clinical practice during the whole period of education and training are shown below. Responses from previous surveys are also provided within the table.

Table 4. Amount of student practical placement time according to EFRS Survey

ECTS	Percentage			Number of Responses		
	2015	2017	2020	2015	2017	2020
10 to 20	-	19.6%	17.5%	-	10	7
21 to 30	-	5.9%	10.0%	-	3	4
31 to 40	-	3.9%	10.0%	-	2	4
41 to 50	-	11.8%	0.0%	-	6	0
51 to 60	-	11.8%	10.0%	-	6	4
61 to 75	-	15.7%	20.0%	-	8	8
76 to 90	-	17.7%	10.0%	-	9	4
> 90	-	13.7%	22.5%	-	7	9

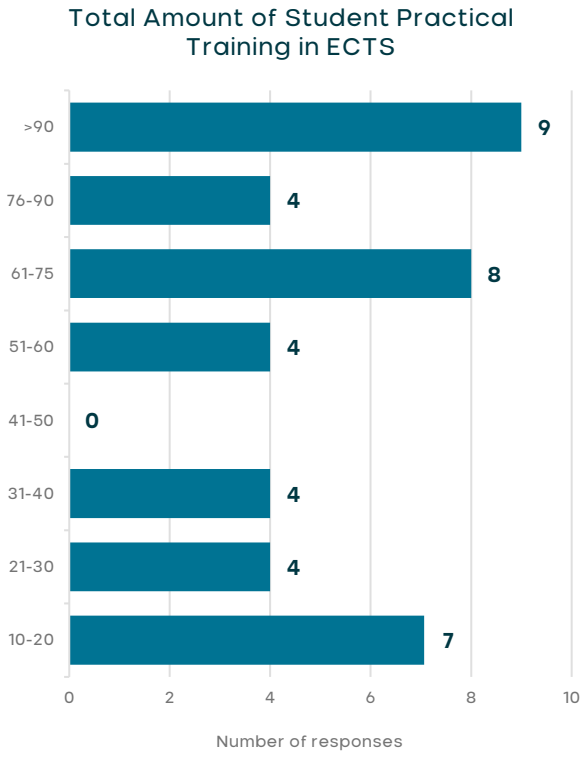

Figure 10. Amount of Student Practical Training on Programme (in ECTS)

Q15. What is the total amount of practical training, in ECTS, for the student in CLINICAL PRACTICE / HOSPITALS (excluding skills labs) during the whole period of education and training? (If you do not use ECTS, please translate the number of hours into ECTS with one ECTS credit generally corresponds to approximately 25 hours of work, including all study activities/assessments)

40 responses were received to this question. The total amount of practical training, in ECTS, for the students in clinical practice only (excluding skills labs.) during the whole period of education and training are shown below.

Table 5. Amount of student practical placement time according to EFRS Survey date

ECTS	Percentage			Number of Responses		
	2015	2017	2020	2015	2017	2020
10 to 20	-	2.0%	0.0%	-	1	0
21 to 30	-	3.9%	7.5%	-	2	3
31 to 40	-	3.9%	17.5%	-	2	7
41 to 50	-	17.7%	15.0%	-	9	6
51 to 60	-	31.4%	22.5%	-	16	9
61 to 75	-	19.6%	10.0%	-	10	4
76 to 90	-	11.8%	17.5%	-	6	7
> 90	-	5.9%	10.0%	-	7	9

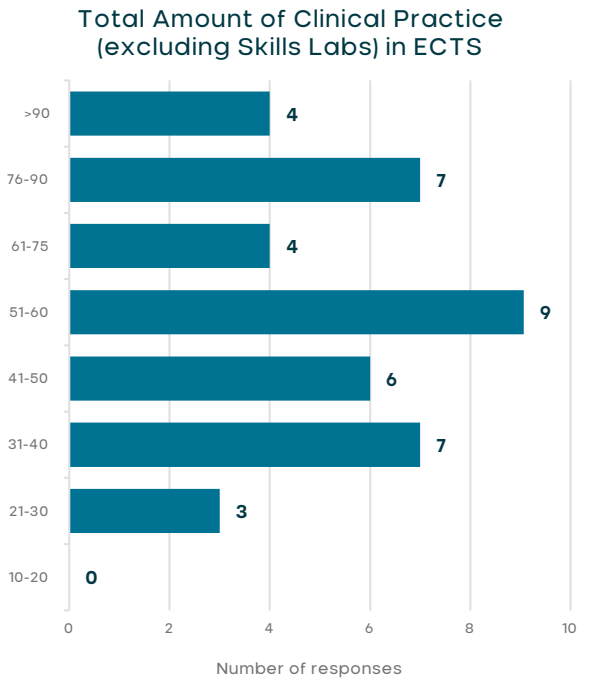

Figure 11. Amount of Clinical Practice Training (excluding Skills Labs) on Programme (in ECTS)

A combination of results for Q 14. and Q 15 with detailed responses from Institutions are summarised in Appendix A.

Q16. Do your students have the option of undertaking clinical placements in other countries?

40 responses were received for this question. 36 (90.0%) responded 'yes' students have the option of undertaking clinical placements in other countries and 4 (10.0%) responded 'no'. International clinical placements were reported as being available to students who study in Austria, Belgium, Denmark, Estonia, Finland, France, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Slovakia, Sweden, Switzerland, UK). These figures were similar to those reported in the 2017 Survey.

2.8 Radiotherapy-specific questions

Q17. Are radiographers within radiotherapy in your country educated and trained to make decisions about Image Guided Radiotherapy (IGRT)?

32 responses were received to this question from all Institutions teaching radiotherapy. 19 (59.4%) Institutions reported that their radiographers were educated and trained to make decisions regarding IGRT, 5 (15.6%) Institutions reported that their radiographers were not educated and trained within this capacity and 8 (25.0%) Institutions reported that they did not know.

Q18. Are radiographers within radiotherapy in your country allowed to make decisions about Image Guided Radiotherapy (IGRT)?

21 responses were received to this question. 14 (66.7%) Institutions reported that their radiographers were allowed to make decisions regarding IGRT, 7 (33.3%) Institutions reported that their radiographers were not allowed and no (0.0%) Institutions reported that they did not know.

Q19. Is Level 7 Masters education available for radiographers within radiotherapy across the following subjects?

32 responses were received for this question and responses are detailed in the figure below.

Q20. For patients attending for radiotherapy treatment is the radiographer responsible for the daily care of the patient?

32 responses were received for this question. 24 (75.0%) Institutions reported that their radiographers were responsible for the daily care of the patient, 7 (18.8%) Institutions reported that their radiographers were not responsible and 2 (6.3%) Institutions indicated that they did not know.

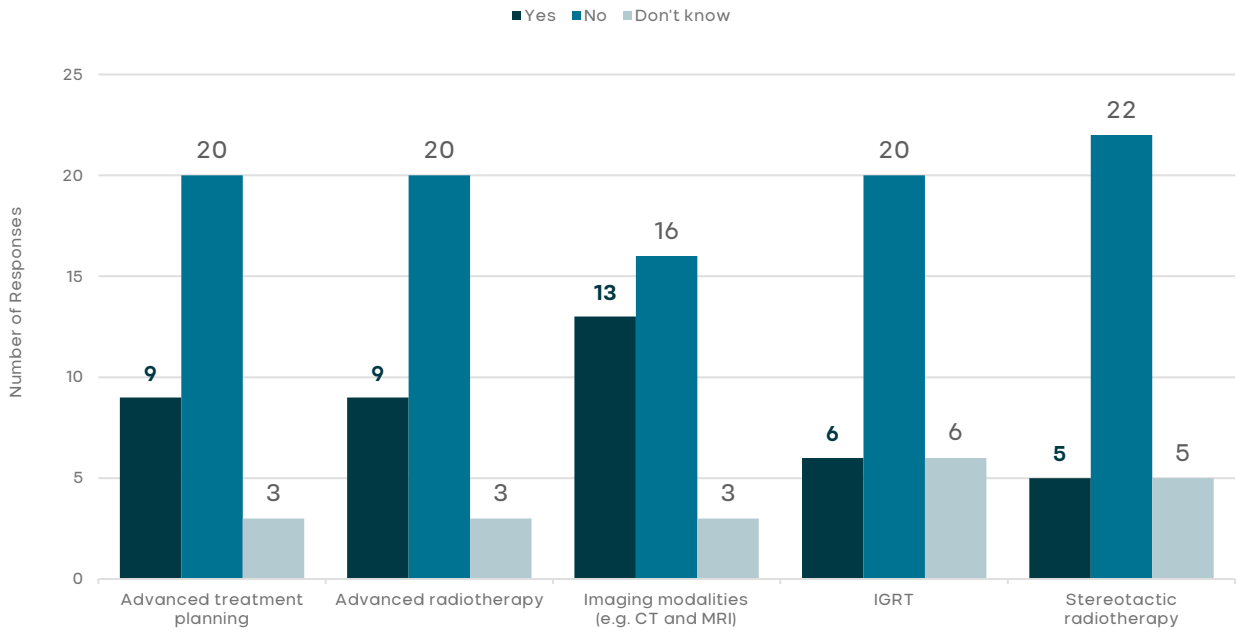

Figure 12. Summary of the Radiotherapy Level 7 training opportunities

2.9 Postgraduate Training Opportunities

Q21. Does your institution offer postgraduate programmes for radiographers at any of the following levels?

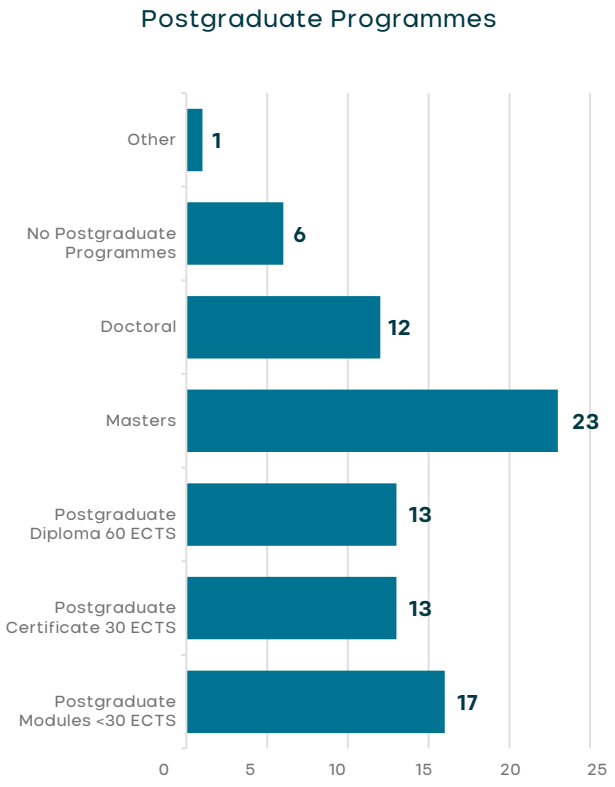

Figure 13. Postgraduate Programmes available

Table 6. Amount of student practical placement time according to EFRS Survey date

ECTS	Percentage			Number of Responses		
	2015	2017	2020	2015	2017	2020
Postgraduate modules < 30 ECTS	NR	0.0%	41.5%	NR	0	17
Postgraduate modules 30 ECTS	NR	29.4%	31.7%	NR	15	13
Postgraduate Diploma 60 ECTS	24.4%	33.3%	31.7%	10	17	13
Masters	39.0%	56.9%	56.1%	16	29	23
Doctoral	14.6%	27.5%	29.3%	6	14	12
No Postgraduate Programmes	26.8%	27.5%	14.6%	11	11	6
Other	14.6%	13.7%	2.4%	6	7	1
NR - Not reported						

Countries with Institutions offering Masters programmes included: Austria, Estonia, Finland, Hungary, Ireland, Italy, Malta, Netherlands, Norway, Portugal, Slovenia, Sweden and the United Kingdom. For Doctoral studies, courses were on offer in Hungary, Ireland, Malta, Norway, Slovenia, and the United Kingdom.

Q22. Please identify the primary areas of focus of the postgraduate programme(s) you offer (select all that apply):

Responses received from the Institutions are summarised in the table below. Differences between the 2020 and 2017 Surveys have also been highlighted.

Table 7. Primary Areas of Focus for Postgraduate Programmes

Primary Area of Focus	Percentage		Number of Responses	
	2017	2020	2017	2020
Brachytherapy	11.4%	9.5%	4	4
Computed tomography	48.6%	31.0%	17	13
Clinical education	34.3%	21.4%	12	9
Clinical leadership/ management	42.9%	21.4%	15	9
Dosimetry	20.0%	19.0%	7	8
General radiography	25.7%	19.0%	9	8
Image guided radiotherapy	NA	11.9%	NA	5
Image interpretation and reporting	28.6%	19.0%	10	8
Interventional procedures	31.4%	11.9%	11	5
Magnetic resonance imaging	54.3%	35.7%	19	14
Mammography	20.0%	19.0%	7	8
Medical Imaging	34.3%	23.8%	12	10
Nuclear medicine	28.6%	16.7%	10	7
Ultrasound	45.7%	35.7%	16	14
Positron emission tomography	11.4%	7.1%	4	3
Radiation protection	31.4%	19.0%	11	8
Radiation therapy	25.7%	23.8%	9	10
RIS/PACS	17.1%	7.1%	6	3
Treatment planning	28.6%	16.7%	10	7
Other areas (see below)	25.7%	16.7%	9	7

Other primary areas of focus reported in Postgraduate Programmes were: 'Multiprofessional care of cancer patients', 'Emergency Radiology', 'Research, Ethics, Law, Philosophy and Sociology' and 'Justification & Optimisation'.

2.10 Teaching staff

Q23. Approximately what is the ratio student/ teaching staff per full time equivalent in your institution on the initial radiography education programme (e.g. 20 students per 1 full time member of teaching staff)?

35 responses were received for this question. There was a wide range of answers from a student/ staff ratio of 1:1 up to a ratio of 75:1 (5:1 to 40:1 in 2017). The majority of respondents, 18 (51.4%) reported a student/ staff ratio of between 5 to 19:1, 8 (22.9%) respondents reported a ratio of between 20 to 29:1 and 5 (14.3%) respondents reported a ratio of between 30 to 39:1. Two (5.7%) respondents indicated that their ratios would be in excess of 40:1. When these results are compared to student/staff ratios found in the 2017 survey, student/ staff ratios remained the same for the majority of respondents.

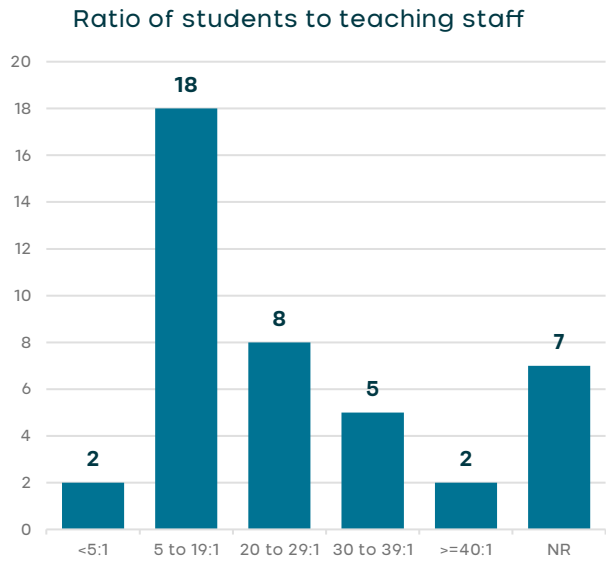

Figure 14. Staff to student teaching ratios for the responding Institutions

Q24. For radiographers (only) who teach on the initial education programme, please indicate the minimum required qualifications:

40 responses were received for this question.

Table 8. Minimum required qualifications for teaching staff

Minimum Qualification	Percentage			Number of Responses		
	2015	2017	2020	2015	2017	2020
Radiography Degree	NR	19.6%	20.0%	NR	10	8
Radiography Degree + Postgraduate teaching qualification	NR	9.8%	5.0%	NR	5	2
Radiography Degree + Master's degree	31.7%	29.4%	30.0%	13	15	12
Radiography Degree + Master's degree + Postgraduate teaching qualification	31.7%	29.4%	32.5%	13	15	13
Doctorate	9.8%	3.9%	5.0%	4	2	2
Doctorate + postgraduate teaching qualification	12.1%	3.9%	2.5%	5	2	1
Other	0.0%	3.9%	5.0%	0	2	2

The two respondents that indicated 'other' minimum required qualifications were: 'Master's Degree in Pedagogy / Education', 'Master's Degree' and 'Postgraduate Teaching Qualification'.

Q25. Does your institution actively support research by radiographers?

40 responses were received for this question. 30 (75.0%) respondents stated 'Yes' regarding whether their Institution actively supports research by radiographers. 10 (25.0%) respondents stated 'No' to this question. Of those Institutions stating 'Yes' the following activities were identified by respondents as being available to radiographers for supporting research. Results from this report were similar to those in the 2017 Education Survey, whereas data were not captured on this topic in 2015.

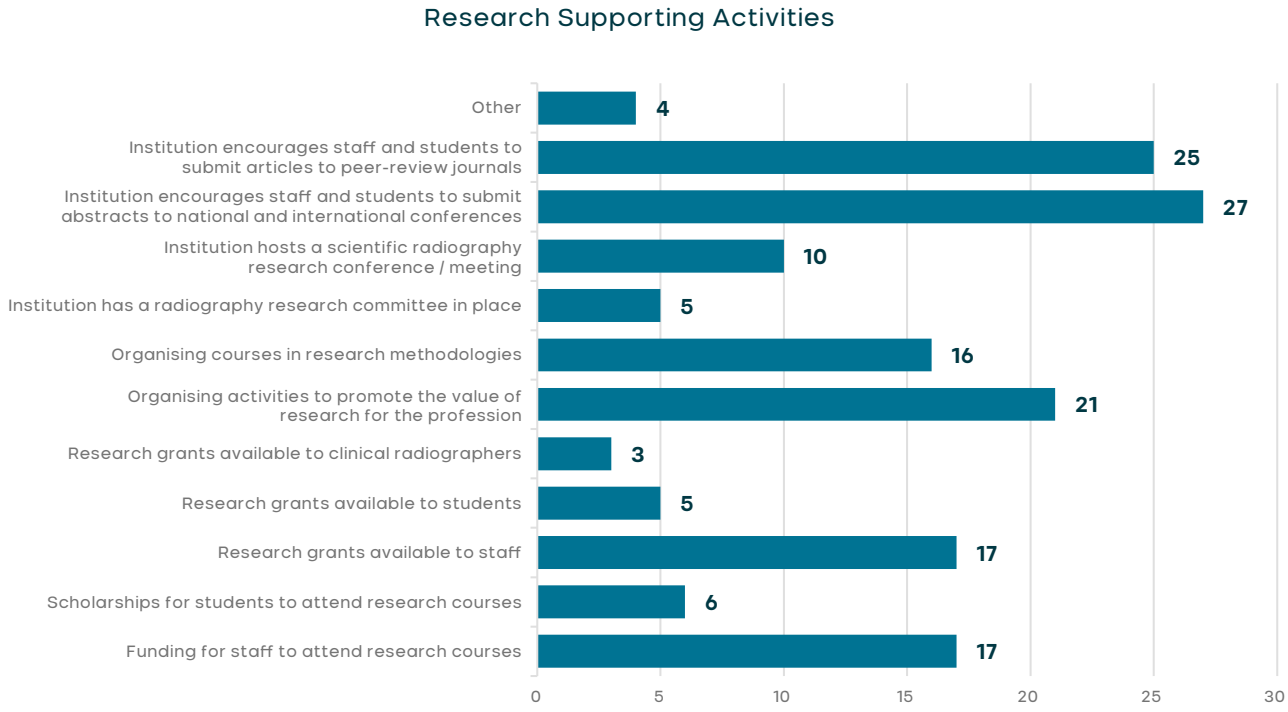

Figure 15. Methods in which responding Institutions support radiographer research

Q26. What percentage of radiographers on your teaching staff have a doctoral level qualification?

38 responses were received for this question. The majority (17 [44.7%]) respondents indicated that between 0 to 10% of staff members currently hold a doctoral level qualification. Data presented in 2017 indicated that half of responding Institutions would have between 0 and 35% of staff holding doctoral level qualifications. These figures appear largely unchanged in comparison with data from 2020.

In terms of the absolute number of staff members holding a doctoral level qualification. Responses were received from 26 Institutions. 8 (30.8%) Institutions indicated that currently no staff members hold a doctoral level qualification. Of the responses from the remaining 18 (69.2%) Institutions the mean (SD [range]) number of staff holding doctoral level qualifications was 1.8 (1.7).

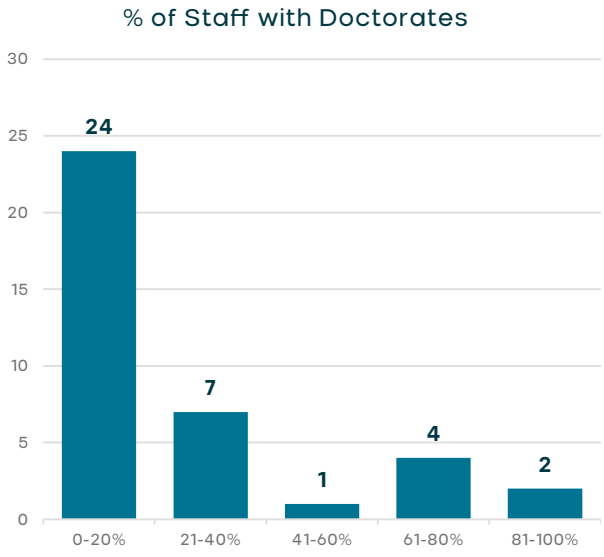

Figure 16. Composition of responding Institutions in terms of % staff with doctorates

2.11 Institutional External Presence

Q27. Has your team published articles in international peer-review journals such as Radiography?

38 responses were received for this question. 25 (65.8%) Institutions responded stating that they had published articles in international peer-reviewed journals (69.5% in 2017). Of those who had published, the majority 9 (39.1%) indicated that they published between 3 and 4 articles per year.

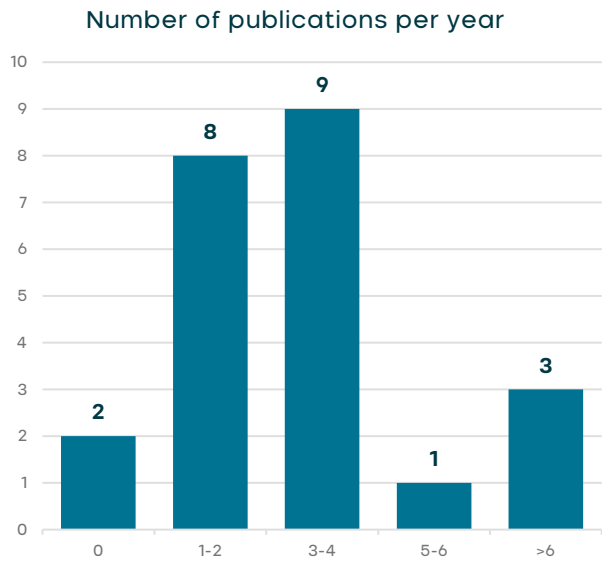

Figure 17. Number of publications per year by responding Institution

Q28. How many national and international research grants has your team been awarded in the past 5 years?

Responses were received from 34 Institutions. The majority 19 (55.9%) indicated that their respective Institutions had not been awarded any national or international research grants (57% in 2017). Between 5 and 7 Institutions indicated that they have been awarded either 1 or 2 national / international research grants (this compared to 6 and 7 Institutions in 2017). National grants have been awarded to Institutions in Finland, Hungary, Ireland, Italy, Netherlands, Slovakia, Slovenia, Sweden, Switzerland and the UK. International research grants have been awarded to Institutions in Belgium, Finland, Ireland, Malta, Portugal, Slovakia, Switzerland and the UK.

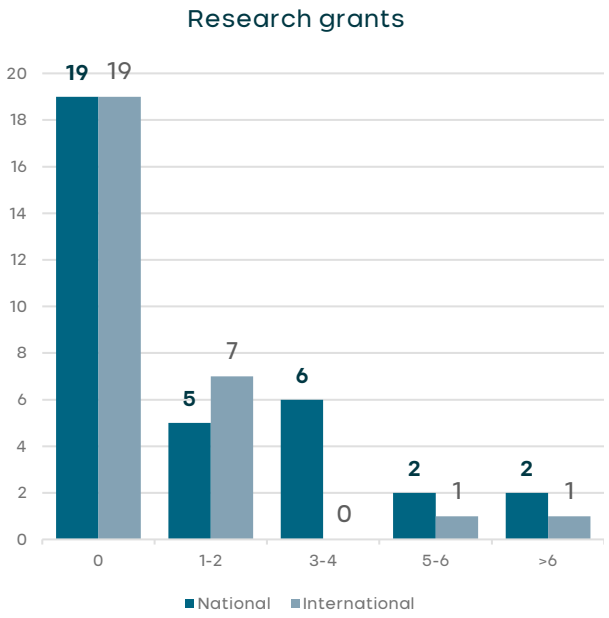

Figure 18. Summary of the national and international research grants won by the responding Institutions in the past 5 years

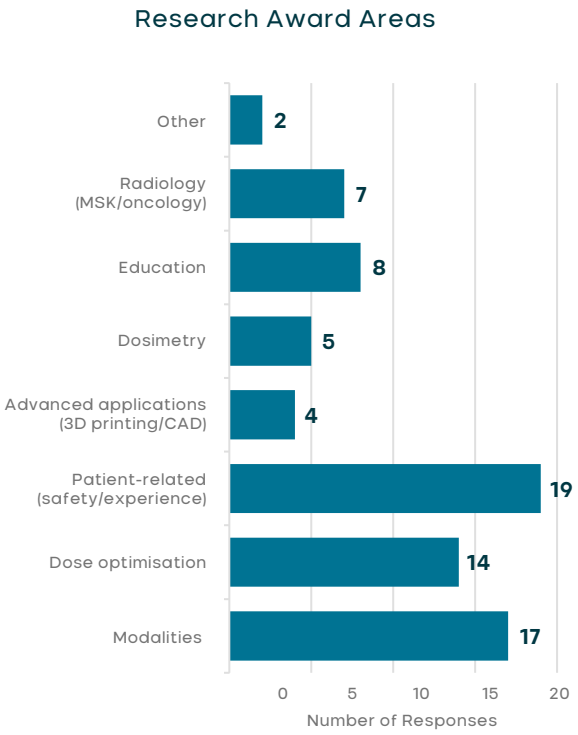

Figure 19. Summary of the research grant award areas

Q29. Do members of your teaching team regularly attend any of the following international congresses?

41 (100%) responses were received for this question. The European Congress of Radiology (ECR) was the most popular and is attended by 31 (75.6%) Institutions (86.7% in 2017). Of those Institutions attending 'other' congresses, national events were the most commonly cited (8 [19.5%] Institutions).

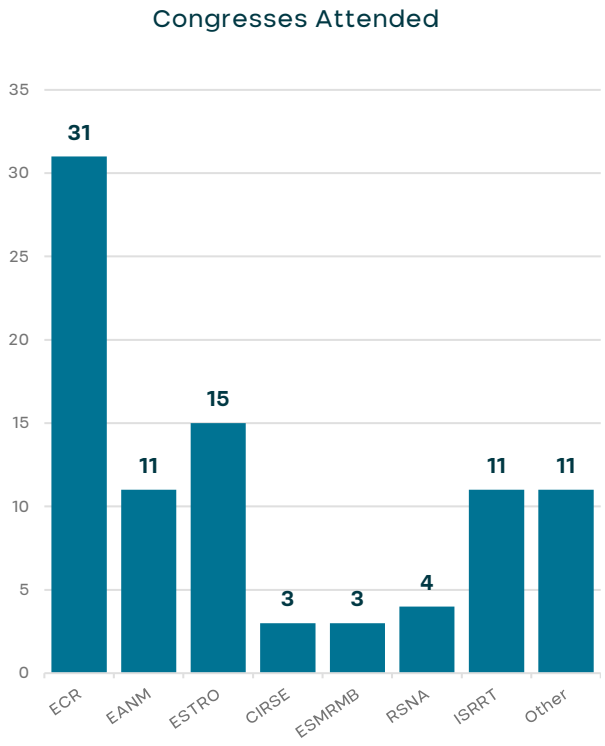

Figure 20. Congresses commonly attended by staff working in the responding Institutions

Next Institutions were asked whether their representatives actively contribute to such events (i.e. through oral or poster presentations). Responses were received from 38 Institutions. 29 (76.3%) Institutions indicated that their representatives actively contributed (75.5% in 2017). Institutions were asked to indicate barriers that prevented them actively contributing to congresses. Four qualitative responses were received and indicated that time, support and language issues were the main barriers.

Institutions were also asked about student contributions to congresses. Again, responses were received from 38 Institutions. Half (19 [50%]) indicated that their students did actively contribute to such congresses, for example in the form of oral / poster presentations (51.0% in 2017). Barriers to students contributing were identified by 12 Institutions. Reasons for not contributing included financial, lack of staff to support students, data only being available once a student has completed study, motivation and language barriers.

2.12 Radiography Research Network (RRN)

Q30. Has your institution implemented a plan on how to give your staff and students access to, and how to use, the EFRS Radiography Research Network (RRN)?

Responses to this question were received from 38 Institutions. Only 11 (29.0%) of Institutions indicated that a plan for promoting the RRN was in place (10.2% in 2017). Reasons for not implementing a RRN plan was provided by 8 (21.1%) Institutions. Reasons included the benefits not being clear, implementation currently being considered, alternative networks being used and a lack of enthusiasm for such an initiative.

2.13 Radiography Journal

Q31. Do you actively promote Radiography, the official journal of the EFRS, to you staff and students?

Responses were received from 38 Institutions. 31 (81.6%) of Institutions indicated that they did promote Radiography to their staff and students (75.5% in 2017). Institutions were asked to provide insight on how the number of submissions could be increased to the journal Radiography. 10 (26.3%) Institutions provided a qualitative response to this question. Responses included providing development opportunities (writing workshops [including language support], online support, postgraduate course), lower fees and developing opportunities for fostering greater collaboration.

2.14 Patient Public Involvement

Q32. Do members of the public or patients contribute to your programmes in any way?

38 responses were received for this question, 12 (31.6%) Institutions indicated that they did involve patients or the public within their programmes. Potential activities included 'being involved in teaching / research, curriculum development, programme validation, staff and student recruitment'. In 2016, responses were similar with 17 (34.7%) Institutions reporting that public or patients actively contributed to educational programmes.

2.15 Labour Market

Q33. With respect to the labour market, in 2019, for your graduates were there enough vacancies?

A positive trend was noted in that a greater percentage of graduates were able to find vacancies for Medical Imaging, Radiotherapy and Nuclear Medicine in 2019 than in 2016. Unsurprisingly, fewer Institutions in 2019 reported that there were not enough vacancies for graduates across the three specialist areas of practise.

Table 9. Comparison of Labour Market positions between 2016 and 2019

	Medical Imaging		Radiotherapy		Nuclear Medicine	
	2016	**2019**	**2016**	**2019**	**2016**	**2019**
Enough vacancies for all to find jobs	36 (72.0%)	34 (89.5%)	23 (62.2%)	25 (80.7%)	18 (51.4%)	18 (60.0%)
Not enough vacancies for all to find jobs	11 (20.0%)	4 (10.5%)	9 (24.3%)	5 (16.1%)	8 (22.9%)	5 (16.7%)
Not sure	3 (8.0%)	0 (0.0%)	5 (13.5%)	1 (3.2%)	9 (25.7%)	7 (23.3%)

3. Limitations

Despite an increase in the number of Affiliate Members (Educational Institutions) the response rate to the 2020 Survey was lower than that in 2017.

The accuracy of survey responses should also be a potential consideration. As with previous surveys, language barriers may have affected some of the responses. In several instances, responses were not provided, this could have been due to the wording / understanding of the question or a lack of access to the necessary information within the responding institution.

It should also be noted that several countries were not represented in this survey. The aim of the survey was to provide a representative picture of radiography education across Europe. This is likely to have been achieved but with the caveat that some information is missing from members who chose not to respond.

4. Conclusions

There is clear evolution of the radiography profession across Europe. Affiliate membership of the EFRS is growing and there is a clear desire for European leadership and direction within radiography education. Diversity in radiography training does exist across Europe and there is evidence that this remains unchanged. European countries will have their own requirements for medical imaging and radiotherapy practitioners, and this will, to some extent, be governed and directed by local practices. Positively, from a labour market perspective, more Institutions are reporting that there are enough vacancies for graduate radiographers in 2019. This does not necessarily translate into sufficient workforce capacity, but this issue was beyond the scope of this survey.

There is a growing desire to develop the profession; postgraduate opportunities and external engagement are all well documented within this Survey. New educational initiatives are evident, for example two-year pre-registration Master's programmes. Simulation and clinical placement play an ever-important role in radiography education. What is not evident from this Survey is the effect of the COVID-19 pandemic on radiography education. The COVID-19 pandemic only materialised several months after this Survey was conducted. Attendance to congresses, utilisation of simulation and skills labs would have undoubtedly changed as result and should be subject to further study. Career development, including postgraduate courses, is likely to be on hold for many radiographers. Many lessons from COVID-19 have already been learnt and programmes have adapted. It will be interesting to gauge in future publications and the next EFRS Educational Institutions Survey (end 2021) how COVID-19 has future impacted on our practices and what will be the lasting picture.

5. Acknowledgements

The EFRS Executive Board and the Educational Wing Management Team would like to thank all Affiliate Members for their continuing support and for taking the time to complete this Survey.

Appendix A

Table 10. Summary, by Institution, of the Practical and Clinical Training.

Country	Institution	Total Amount of Practical Training (inc. Skills Lab.) in ECTS	Total Amount of Clinical Practice Training (excl. Skills Lab.) in ECTS
Austria	FH Campus Wien	51-60	41-50
Belgium	Haute Ecole de la Providence de Liege	51-60	41-50
Belgium	Haute Ecole Vinci	10-20	31-40
Belgium	Odisee UoAS	> 90	41-50
Denmark	University College Lillebelt	21-30	76-90
Estonia	Tartu Health Care College	>90	>90
Finland	Oulu UoAS	61-75	61-75
Finland	Metropolia UoAS	61-75	41-50
Finland	Tampere UoAS	61-75	61-75
Finland	Savonia	76-90	61-75
France	Lycee Charles Carnus	61-75	51-60
Hungary	Semmelweis University	>90	76-90
Hungary	University of Pecs	>90	>90
Ireland	University College Cork	10-20	31-40
Italy	Universita di Bologna	61-75	51-60
Latvia	University of Latvia	10-20	31-40
Latvia	P. Stradins medical college University of Latvia	31-40	21-30
Lithuania	Kauno Kolegija		
Lithuania	Klaipeda University	21-30	21-30
Lithuania	Vilniaus Kolegija UoAS	31-40	31-40
Malta	University of Malta	>90	76-90
Netherlands	Hanze UoAS	76-90	61-75
Netherlands	InHolland UoAS	76-90	51-60
Netherlands	Fontys UoAS	>90	51-60
Norway	University College of South-Eastern Norway	76-90	51-60
Norway	OsloMet	61-75	51-60
Norway	NTNU Gjøvik	51-60	51-60
Norway	NTNU Trondheim	10-20	51-60
Portugal	Universidade do Algarve - Escola Superior da Saúde	51-60	51-60
Portugal	Escola Superior de Technologia da Saúde de Coimbra	61-75	76-90
Slovakia	University of Presov	21-30	76-90
Slovenia	University of Ljubljana	31-40	31-40
Sweden	Jöngköping School of Health & Welfare	31-40	21-30
Sweden	Lund University	10-20	31-40
Sweden	Örebro University	10-20	41-50
Switzerland	UoAS Western Switzerland	>90	76-90
United Kingdom	University of Derby	>90	>90
United Kingdom	University of Salford	10-20	31-40
United Kingdom	London Southbank University	>90	>90
United Kingdom	Robert Gordon University		
United Kingdom	University of Ulster	21-30	76-90
United Kingdom	University of Exeter	61-75	41-50

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