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## Clinical radiography education across Europe

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## ABSTRACT

**Purpose:** To establish a picture of clinical education models within radiography programmes across Europe by surveying higher education institutions registered as affiliate members of the European Federation of Radiography Societies (EFRS).

**Method:** An online survey was developed to ascertain data on: practical training, supervisory arrangements, placement logistics, quality assurance processes, and the assessment of clinical competencies. Responses were identifiable in terms of educational institution and country. All educational institutions who were affiliate members at the time of the study were invited to participate (n = 46). Descriptive and thematic analyses are reported.

**Results:** A response rate of 82.6% (n = 38) was achieved from educational institutions representing 21 countries. Over half of responding institutions (n = 21) allocated in excess of 60 European Credit Transfer and Accumulation System (ECTS) credits to practical training. In nearly three-quarters of clinical placements there was a dedicated clinical practice supervisor in place; two-thirds of these were employed directly by the hospital. Clinical practice supervisors were typically state registered radiographers, who had a number of years of clinical experience and had received specific training for the role. Typical responsibilities included monitoring student progress, providing feedback and completing paperwork, this did however vary between respondents. In almost all institutions there were support systems in place for clinical placement supervisors within their roles.

**Conclusions:** Similarities exist in the provision of clinical radiography education across Europe. Clinical placements are a core component of radiography education and are supported by experienced clinical practice supervisors. Mechanisms are in place for the selection, training and support of clinical practice supervisors. Professional societies should work collaboratively to establish guidelines for effective clinical placements.

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## Introduction

Radiographic practice is over one hundred years old and from the outset the role of the radiographer has constantly changed and continues to evolve in parallel with advances in technology.

Maintaining workforce capacity, whilst reacting to the latest clinical demands on radiographer training, is a key responsibility of radiography educators. Within Europe this is typically provided by universities, technical institutes and vocational colleges. A report by the European Federation of Radiographic Societies (EFRS) evaluated the landscape of radiography education across Europe.<sup>1</sup> Founded in 2008, the EFRS currently represents over 100,000 radiographers and 8000 student radiographers across Europe through 37 national societies and 57 educational institutions. The Educational Wing of the EFRS, established in 2010, is comprised of all of the educational institutions that are affiliate

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members of the EFRS and its aim is to promote and develop all levels of radiography education and research across Europe. The EFRS report<sup>1</sup> focused on a broad spectrum of issues including the underpinning curricula, duration of study, credit load, accreditation requirements, staff qualifications, exchange opportunities and the availability of postgraduate programmes. One of the key outcomes from the report was that significant diversity exists between institutions, especially when spread across international borders. Despite the alignment efforts of the Higher Education Network of Radiographers in Europe (HENRE), a thematic network co-financed by the European Commission through the 'Tuning Educational Structures in Europe' project,<sup>2–4</sup> the EFRS Education report<sup>1</sup> highlighted significant differences between radiography programmes across Europe. The university driven 'Tuning' projects aim was to offer a definitive approach to facilitate the implementation of Bologna (European process to ensure comparability in the standards and quality of higher-education qualifications), whilst also preserving autonomy and freedom of educational institutions.<sup>4–6</sup> Likewise the purpose of the European Qualifications Framework (EQF) is to aid Member States, educational institutions, employers and individuals in the comparison of qualifications across the European Union's diverse education and training systems.<sup>5,7–9</sup> This led the EFRS to publish their EQF Level 6 Benchmarking Document: Radiographers.<sup>8</sup>

The process of educating a radiographer is multifaceted and typically incorporates a split between academic studies within a university or college and a practical component usually within a hospital or health centre.<sup>10</sup> Given the results of the EFRS survey<sup>1</sup> and the widespread differences in healthcare provision between EU Member States<sup>11</sup> it is likely that there may be distinct differences in the provision of clinical radiography education. This has recently been brought to light with the publication of a report detailing the inclusion of patient safety within radiography curricula across Europe.<sup>12</sup> It is, therefore, a core aim of the EFRS organisation to report the current status of clinical radiography education across Europe.

## Methods

### Design

The research design was an online survey using a questionnaire developed by the EFRS Educational Wing focussing on key issues relating to clinical radiography education. The questionnaire comprised of open and closed questions and consisted of sections designed to ascertain data on: amount and types of practical training within a programme (two questions), supervisory arrangements (ten questions), placement logistics (two questions), quality assurance processes (one question) and the assessment of clinical competencies (two questions). All respondents consented to data being identifiable in terms of educational institution and country. The Dutch Society of Radiographers was enlisted to help develop and deploy the online survey in conjunction with the Dutch research agency MWM<sup>2</sup> (MWM,<sup>2</sup> Amsterdam, ML), backtracking was not permitted between sections of the survey.

### Participants

All 46 educational institutions, that were EFRS affiliate members (educational institutions) at the time of the study, were invited to complete the survey between November 2014 and January 2015. An initial response deadline of 2 weeks was stated and two follow-up emails were sent to non-responding institutions.

### Data analysis

All data were uploaded to SPSS Version 20 (IBM, Armonk, NY). Descriptive statistics are reported for most analyses while open questions were examined using thematic analysis. For the purposes of assessing the contribution of practical training to a programme the European Credit Transfer and Accumulation System (ECTS) was used. By way of an example a single year of full-time study typically generates 60 ECTS (in the United Kingdom credit system this would equate to 120 credits).

## Results

Responses were received from 38 of the 46 educational institutions giving a response rate of 82.6% representing 21 countries. The educational institutions that participated in this survey are listed in Table 1 together with a three digit identifier. The three-digit identifier facilitates the identification of individual institutional responses for each question and has been used in similar publications.<sup>1,12</sup>

### Time available for practical training

Respondents were asked to state the total amount of practical training for the students in both skills labs (educational institution based X-ray training facility or similar) and in the clinical practice setting during the whole period of education and training. Responses were received from all 38 respondents for this question (Fig. 1). The majority of institutions ( $n = 21$ ; AT2, CH1, DK1, EE1, FI1, FI2, FI3, FI4, GB1, GR1, IE1, IT1, MT1, NL1, NL2, NO1, NO2, NO3, NO4, PT1, PT2) offered in excess of 60 ECTS of practical training for students during their programmes. This was followed by 11 institutions (AT1, BE1, CZ1, FR1, GB2, GB3, HU1, NL3, PT3, SE2, SE3) that incorporated between 51 and 60 ECTS of practical training for students in the skills lab and in clinical practice during their programmes. For the 21 institutions with in excess of 60 ECTS, the mean ECTS for practical training in their programmes was 76.9 (SD = 11.3; range: 62–96 ECTS) (Fig. 1).

### Time allocated for training in skills labs

Respondents were asked to quantify the total amount of practical training that the students perform in the skills lab during the whole period of training (Fig. 2). 55% ( $n = 21$ ) of programmes provided 15 ECTS or less of practical training within the skills labs (AT1, AT2, BE1, CZ1, DK1, FI2, FI4, FR1, GB1, GB2, GB3, IE1, IT1, LV1, MT1, NO2, NO3, NO4, SE1, SE2, SL1). Programmes offering greater than 26 ECTS of practical training in the clinical skills lab were in Belgium, the Netherlands and Portugal (BE2, NL1, NL3, PT1, PT2, PT3).

### Clinical supervision of students

Respondents were asked to identify the percentage of the total amount of ECTS clinical training that students perform under supervision. The percentage of the total amount varied from 10 to 20% of the time ( $n = 3$ ; AT2, BE2, LV1) to in excess of 50% of the time ( $n = 10$ ; CH1, DK1, FI1, FI2, GB1, IT1, MT1, NL2, NO1, NO3). For the 10 institutions with an excess of 50% of the student clinical training performed under supervision, the mean percentage was 84.6% (SD = 18.7%; range: 55–100%).

The majority, 79% ( $n = 30$ ), of institutions indicated that between 1 and 3 students were supervised by an individual clinical staff member during clinical placement. 8% ( $n = 3$ ; HU1, LU1, PT1) indicated that supervision was for 4–6 students and 13% ( $n = 5$ ;

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