



JUNE 2022

# CONTRIBUTION OF PHYSIOLOGY EDUCATION AND TRAINING TO THE NORTHERN IRISH WORKFORCE

## Factsheet

To download the key findings report and the full report please visit [physoc.org/policy/higher-education/physiology-education](https://physoc.org/policy/higher-education/physiology-education)

**The Physiological Society, the largest network of physiologists in Europe, and the Academy for Healthcare Science, commissioned Emsi Burning Glass to measure the contribution to the workforce of higher education provision of which physiology is a core component of the Northern Irish economy and the UK as a whole. This fact sheet relates specifically to data from students and graduates of Northern Irish higher education institutions.**

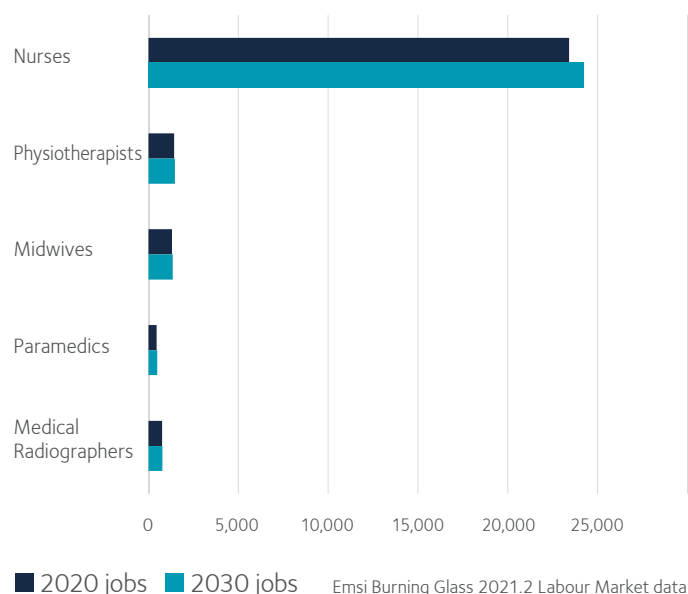
Many students who study these courses go on to have successful careers in health and care occupations. One in seven jobs in Northern Ireland are in health and care occupations, which highlights physiology's importance to the nation's economy and health and wellbeing of its residents.

Emsi Burning Glass completed a study in early 2022 focused on the economic contribution of current and former students. This study uses a two-pronged approach of an economic impact analysis and a benefits analysis. A link to the full report can be found on the websites of both The Physiological Society and Academy for Healthcare Science. This document focuses on jobs of which physiology is a core component in Northern Ireland.

Figure 1 shows labour market data for Northern Ireland around the top occupations in which students who study courses of which physiology is a core component are employed.

- Out of the top five occupations, and as shown in Figure 1, the greatest number of graduates who study courses of which physiology is a core component go on to work as nurses.

- Paramedic roles are expected to grow more than the other occupations at 7% between 2020 and 2030. The four other occupations are expected to grow between 2% and 4%.



**Figure 1** Current and projected jobs in Northern Ireland for top occupation groups for those current and former students included in the analysis, 2020 and 2030.

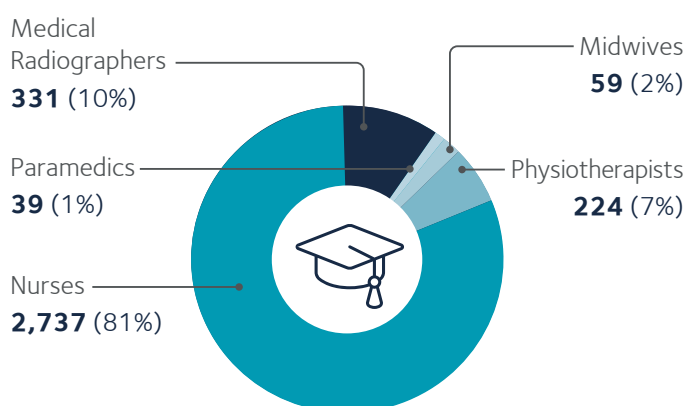
It is also possible to analyse job postings, or online advertisements for jobs posted by companies trying to attract applicants with physiological education or training.



The jobs data in Figure 1 are insightful given the standardised data collection method, but job postings data allow for more real-time analysis of job demand. Figure 2 displays job posting information for the occupations of students who study courses of which physiology is a core component.

- Nurses comprised 81% of the job postings related to the top five occupation groups employing graduates of which physiology is a core component, or 2,737 unique job postings from March 2021 to February 2022.
- The job postings data shows that nurses are in high demand, with employers typically posting six job postings for every one position that needs filled, which is nearly double the amount for all other positions across Northern Ireland.
- Medical radiographers, which is the fifth largest occupation for graduates who study courses of which physiology is a core component enter, is the third largest occupation in term of job postings.

**Figure 2** Unique job postings in Northern Ireland for top occupations of students included in the analysis, March 2021 to February 2022.



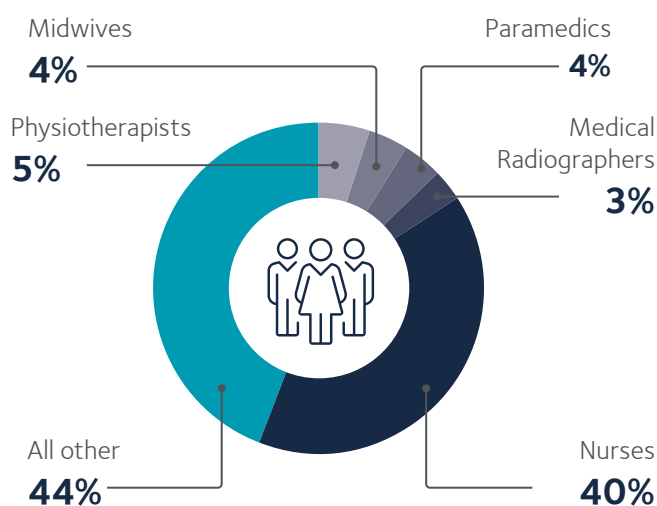
Source: Emsi Burning Glass 2021.2 Job Postings data

### Top occupations of current and former students

Figure 3 shows the top occupations students who study courses of which physiology is a core component are employed in six months after receiving a qualification. It is based on the *Graduate Outcomes* survey and represents all students who study courses of which physiology is a core component, not just Northern Ireland students who study courses of which physiology is a core component.

- Students who study courses of which physiology is a core component work in a variety of occupations after leaving university. Graduates who study courses of which physiology is a core component are in a range of exciting and fulfilling careers that put their education into practice.
- The largest occupations for graduates who study courses of which physiology is a core component are nurses (40%), physiotherapists (5%), and midwives (4%).

**Figure 3** Top occupation groups



Source: HESA Graduate Outcomes data



## Supporting secondary school students preparing for mainstream examinations to manage their stress

This project evaluated learning efficiency in the classroom by integrating physiological mechanisms that enhance attention, preparedness and readiness to learn. Through this workshop we explored autonomic nervous system regulation as an effective method of preparing an individual to counteract stress. The format involved edutainment and student preparing for formal examinations such as GCSEs and A Levels.

This project was a randomised cross over trial whereby students were academically evaluated during simulated stressful conditions mimicking official examination conditions. All students evaluated how stress impacted on their physiology and underwent sensory integration activities (proprioception and vestibular). Students

were academically retested under identical conditions and scores were compared.

As a result of the fundings from the project, permanent bespoke sensory integration space integrated within the school established and staff and students trained to incorporate this activity in lead up to examination period. This activity was also disseminated at a national event called *NI Sciencefest* in February 2022 to an international audience.



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## Using physiology teaching to enhance the behavioural skills required of tomorrow's doctors



The General Medical Council's outcomes for graduates sets out behavioural skills such as "respect", "empathy", "compassion", "interpersonal skills" and "active listening" required of newly qualified doctors. These skills are generally not taught alongside physiological knowledge. We collaborated with the School of Drama at Queen's University Belfast (QUB) to test whether physiology teaching can be used to provide training in these core skills. We blended science and art approaches to design and implement a non-classical physiology tutorial on the physiology of hypofertility by inviting final year Drama students to act as simulated patients.

Analysis of student surveys demonstrated that the experience was more engaging, authentic, and unpredictable than even general practice family attachments with genuine but "ideal" patients.

Realistic simulations of doctor-patient interactions emphasised the importance of physiology to patient care, while also embedding "human factors" skills, thus enhancing the educational experience for medical students. Simulations ensure that medical students use a safe environment to make mistakes before seeing real patients. This work was recognised by QUB Centre for Medical Education ('notable impact on education/practice') for its potential to change teaching practices in the medical curriculum when introducing physiology concepts.



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