

# NES Healthcare Science Events

## NES Healthcare Science Education and Training Event

### Programme

Our hybrid education and training event attracted **155** attendees over the 2 days, with **81** attending in-person at COSLA, Edinburgh on the second day.

The **4** plenary sessions featured a mix of speakers including Ally Boyle (Non-Executive Director, NES), Lindsay Donaldson (Deputy Director of Medicine, NES) and clinical colleagues from across NHSScotland and higher education.

All the presentations were well received and stimulated rich discussions within the following themes:

- + Artificial intelligence
- + Considerations for effective training
- + Patients first
- + Communicating clearly /  
Spotlight our work

You can access an interactive programme which has embedded links to recordings of the plenary session presentations: [Recordings from the NES Healthcare Science Education and Training Event 2024](https://www.hcstraining.nhs.scot/news/recordings-from-the-nes-healthcare-science-education-and-training-event-2024) (hcstraining.nhs.scot/news/recordings-from-the-nes-healthcare-science-education-and-training-event-2024).

### Workshops

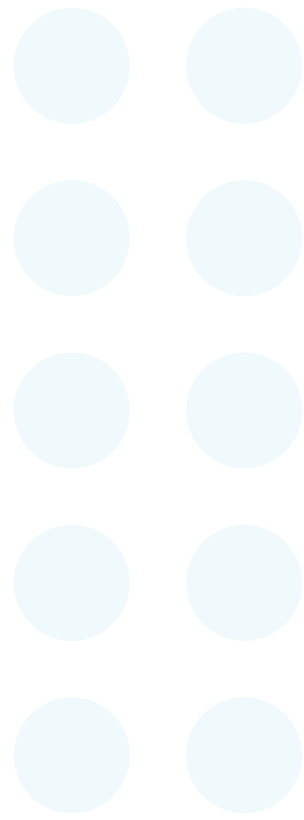
There were also **4** workshops on offer to our in-person delegates, with each of them being able to participate in **2** of the following throughout the day:

- + Perspectives of Equivalence Pathways
- + HCS Support Worker Education and Development Framework
- + Continuous improvement through feedback
- + Inspiring future generations of Healthcare Scientists

### Exhibitors

We were grateful to our exhibitors who enhanced the event and were available to speak to delegates during the networking sessions and breaks:

- + STEM ambassadors in Scotland
- + Skills Development Scotland /  
My World of Work
- + Knowledge Network
- + InnoScot Health Ltd



# Poster competition

Congratulations to both Laura Van Ransbeke and Carly MacMillan (Trainee Respiratory Physiologists, NHS Lothian) who were the winners of our poster competition.

The brief was to design an engaging poster that clearly communicated their HCS specialism and role to the public, imagining it would be displayed in their local GP practice.

You can view all of the poster entries on the [Resources](#) page of the website for our Education and Training Event ([nes.scot.nhs.uk/events/healthcare-science-education-and-training-event-2024](https://nes.scot.nhs.uk/events/healthcare-science-education-and-training-event-2024)).

**Healthcare Science Spotlight**  
**RESPIRATORY PHYSIOLOGY**  
Laura Van Ransbeke & Carly Macmillan, Respiratory Physiologists, Royal Infirmary of Edinburgh

**Hi! Our names are Laura and Carly and we are trainee respiratory physiologists! Many patients who are referred for breathing tests wonder what they involve and may feel anxious about attending because they aren't sure what to expect. We are here to give an overview of our department so patients can arrive feeling prepared, relaxed and ready to give it a go!**

**What is Respiratory Physiology?**  
Respiratory Physiology is a specialism of Healthcare Science that focuses on how the breathing system works. Respiratory Physiology departments are located within the hospital and provide a service for a range of patients who have been referred by other healthcare professionals.  
Here, we perform lung function tests using specialist equipment to look at how well your lungs are working and help identify any problems.

**Why might I need breathing tests?**  
You will be referred for breathing tests depending on the symptoms you are experiencing or the treatment you require.  
Common symptoms include:  
Breathlessness, Recurrent chest infections, Persistent cough, Wheeze  
You may perform more than one test depending on your risk factors and symptoms. Risk factors can include smoking (including vapes/e-cigarettes), a family history of respiratory conditions and occupational exposure.

**How do we assess lung function?**  
**Spirometry (± Reversibility)**  
Spirometry is a test that measures the capacity of your lungs and the speed you can push air out of your lungs. If your spirometry results are lower than predicted, a reversibility test may be performed. This test can see if your airways respond to a bronchodilator medicine, a drug that works to open up your airways as much as possible.  
**Lung Volumes**  
The lungs are made up of lots of different volumes. While spirometry is useful for measuring some of these volumes, there are some that it can't directly measure. Body Plethysmography or Nitrogen Washout are performed in order to measure these volumes. The patient will perform the test they are most comfortable with.  
**Gas Transfer Test**  
The gas transfer test is designed to measure how effectively your lungs are able to give oxygen to the blood, from the air you breathe in.  
**Specialised Tests**  
There are also a range of specialised tests, such as Fitness to Fly assessments and Cardiopulmonary Exercise Tests (CPET), that are performed in the department. These tests are carried out by Clinical Scientists and Highly Specialised Respiratory Physiologists.

**How do we contribute to patient care?**  
Clinical and medical research, Improving effectiveness of treatment, Improving quality of life through advice and interventions.

**What makes our specialism interesting?**  
The information we collect about the health of your lungs can be useful for lots of reasons. We perform tests for patients from a variety of clinical backgrounds and good teamwork with our patients is essential to ensure high quality results. This allows us to build rapport with people from all walks of life, which is one of the most rewarding parts of working in respiratory physiology.  
Some examples of the patients we work with:  
Scottish National Spine Service, Scottish Liver Transplant Unit, Post-ICU patients, Haematology, Cardiac and Vascular Surgery.

**Body Plethysmograph ('The Box')**  
The Box is one of our most important pieces of equipment as it allows us to perform lots of different tests. It can also be adapted to suit individual patient needs.  
**Specialist Equipment**  
Spirometers are small, portable machines used to perform spirometry and reversibility tests. A FeNO test is used to help diagnose asthma by detecting inflammation in the airways. If it seems someone has lots of inflammation, they may be given an inhaler to try and help control their symptoms.

Winning poster competition entry: Carly MacMillan and Laura Van Ransbeke (Trainee Respiratory Physiologists, NHS Lothian), shining a spotlight on Respiratory Physiology

**What can Nuclear Medicine do for you?**  
Bryony Lumb Morollon

**What is Nuclear Medicine?**  
Nuclear medicine uses small amounts of radiation to look at bodily function and help with diagnosing and treating disease.  
Radioactive tracers called radiopharmaceuticals are administered to the patient and are scanned using special cameras, designed to detect the radiation. Different radiopharmaceuticals can tell us different things about physiological processes happening in your body, from looking at bones to kidneys and brains.

**Working in Nuclear Medicine**  
A varied team of scientists, technologists, nurses, and medics work together to blend radiation science with medicine while aiming to have a positive impact on patient's lives.  
Radiation can be intimidating but the work we do ensures its safe and can be used to benefit patients.

**Patients at the Heart of Nuclear Medicine**  
At nuclear medicine we provide vital information to help with the diagnosis, staging, and treatment of disease.  
Through this, patients can get put on the correct care path to better their health and help improve their quality of life.

NHS Education for Scotland, Department of Clinical Physics & Biomedical Engineering, NHS Greater Glasgow and Clyde

**Healthcare Science in the NHS: Cardiac Science**  
NHS SCOTLAND

Cardiac physiologists/cardiac scientists work regularly with patients in hospital cardiology departments, to carry out diagnostic testing and monitoring of patients with known or suspected heart disease.

Cardiac physiologists understand the complex science of the heart allowing them to analyse and interpret results from various diagnostic tests.  
To help prevent, diagnose, monitor progression of, and treat disease.

They perform echocardiograms: ultrasound scans to assess the structure of the heart and blood flow through the heart.

Cardiac physiologists perform ECGs and 24-hour ECG monitoring to determine heart rate and rhythm.

In catheter labs cardiac physiologists assist with angiograms and angioplasty with stent insertion procedures to assess and improve blood flow to the heart.

They assist with pacemaker/ICD implantation and carry out pacemaker/ICD check-ups.

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**Radiotherapy Physics**

**What does a Radiotherapy Physicist do?**

**Treatment Planning**  
Physicists are a part of a team to create each patient's individual treatment plan.  
Use specialised software to model and plan the treatment beams, to ensure they deliver the right dose of radiation to the right area.

**Machine Quality Assurance**  
Physicists design and perform a range of checks on treatment equipment to make sure they are safe to use and can accurately deliver patient treatment.

**Research and Innovation**  
Physicists are heavily involved in the development of new radiotherapy beams of radiation to treat cancer. Can include working on clinical trials and developing treatment techniques. Current research areas include use of AI in radiotherapy, proton therapy and personalised radiotherapy.

**Why become a Radiotherapy Physicist?**

Work with a range of interesting and challenging technology and equipment.  
Use your skills and knowledge to improve the quality care to patients.  
Get involved in cutting-edge research and research projects to advance radiotherapy.  
Experience a diverse and varied field of work where you can apply and expand your knowledge and technical skills.  
Embark on a career where you can learn, develop and challenge yourself every day.

Poster competition runner-up entries: Shining spotlights on Nuclear Medicine (Bryony Lumb Morollon) | Cardiac Science (Emma MacDonald) | Radiotherapy Physics (Catherine Stephens)

## Feedback

We received **21** responses to our evaluation form sent out to all delegates, regardless of whether they attended both days and whether they attended virtually or in-person.

- + 28.6% of respondents only attended the first day
- + 57.1% attended the second day in-person, rather than virtually
- + 73.6% of respondents gave a score between 7 and 10 when asked if they felt included during the event
- + 100% of respondents reported they felt the length of the plenary sessions was about right
- + 95.2% indicated panel discussions were about the right length

However, comments received did indicate some presentations ran over which ate into the available time for questions and discussion.

Interestingly only 68.4% of respondents felt there was sufficient time allowed for networking and discussion at the event. This is despite us including longer breaks at our in-person venue to try and maximise opportunities for delegates to engage in networking.

We should consider ways to enable colleagues attending virtually to be able to network with each other in some capacity next year.

Most respondents indicated they found all the webinar and workshop sessions very useful:

- + **Webinar 1**  
Artificial intelligence 84.2%
- + **Webinar 2**  
Considerations for effective training 84.2%
- + **Webinar 3**  
Patients first 80%
- + **Webinar 4**  
Spotlight Our Work 76.9%
- + **Workshop 1**  
Perspectives of Equivalence Pathways 80%
- + **Workshop 2**  
HCS Support Worker Education and Development Framework 100%
- + **Workshop 3**  
Continuous improvement through feedback 75%
- + **Workshop 4**  
Inspiring future generations of Healthcare Scientists 83%

The main reasons stated for delegates attending the event in-person, rather than virtually, were networking opportunities and because they could focus on the sessions without distraction.

On the next page you will find delegate comments which highlight the value of attending in-person but also the advantages, in terms of accessibility and flexibility, of offering virtual sessions on MS Teams.

## Delegate comments

“.....  
Teams is fine, works to a degree – but I don’t think it replaces the experience of the in-person event for discussion and networking with peers across all areas of HCS.  
.....”

“.....  
I firmly believe that the opportunity to meet face to face provides the best environment for learning and that networking in person leads to a more vital environment for absorbing information and passing on good practice.  
.....”

“.....  
Teams meant it was possible to dip in and out of sessions whilst continuing work.  
.....”

“.....  
It was more easy and convenient format to attend seminars using Microsoft Teams.  
.....”

“.....  
I really enjoyed the session, I liked that it was accessible via teams due to practicality issues of traveling.  
.....”

## Last word from a delegate

“.....  
I just hope that the event continues to run annually. In the modern day digital world we are running out of opportunities for real world discussion and networking. This event is becoming precious for that reason.  
.....”



# Spotlight Your Work! webinars

Communicating science is an important skill and our Spotlight Your Work! webinars are all about the art of presenting. They are an excellent opportunity to highlight the work Healthcare Scientists are doing to improve healthcare across NHSScotland.

We are all passionate about our work and believe in it, but can we enthuse others? Being able to do this is increasingly necessary as we progress into senior roles, and it is never too early to start!

These hour long webinars provide an opportunity for trainees to present for 10 minutes, explaining their work and their specialism to a wider audience. It is a safe space to gain experience, to get feedback, and to get recognition.



## Register your interest to present

Please register your interest in having the opportunity to present at one of our future webinars by using the following [MS Form](https://forms.office.com/e/2hfvDWdCdD) (forms.office.com/e/2hfvDWdCdD).

Once we have a sufficient cohort, we contact participants and organise a suitable date. So register your interest and let's turn on the spotlights!

We ran 2 virtual webinars in 2023, on the 22nd August and the 27th November, and the presentations covered a wide range of Healthcare Science specialisms:

- + Cardiac Physiology
- + Clinical Biochemistry
- + Genomics
- + Medical Physics
- + Ophthalmic and Vision Science
- + Photobiology
- + Rehabilitation Engineering
- + Reproductive Sciences



Access recorded talks from both webinars, with transcripts available, on the [Spotlight Your Work!](https://www.nhs.uk/learn/spotlight-your-work/) page on Turas Learn (learn.nhs.scot/71189).