eWIN Workforce Information Network Portal

NHS Health Education North West

Hot Topic: The Cardiac Scientist Role and its Impact within the NHS

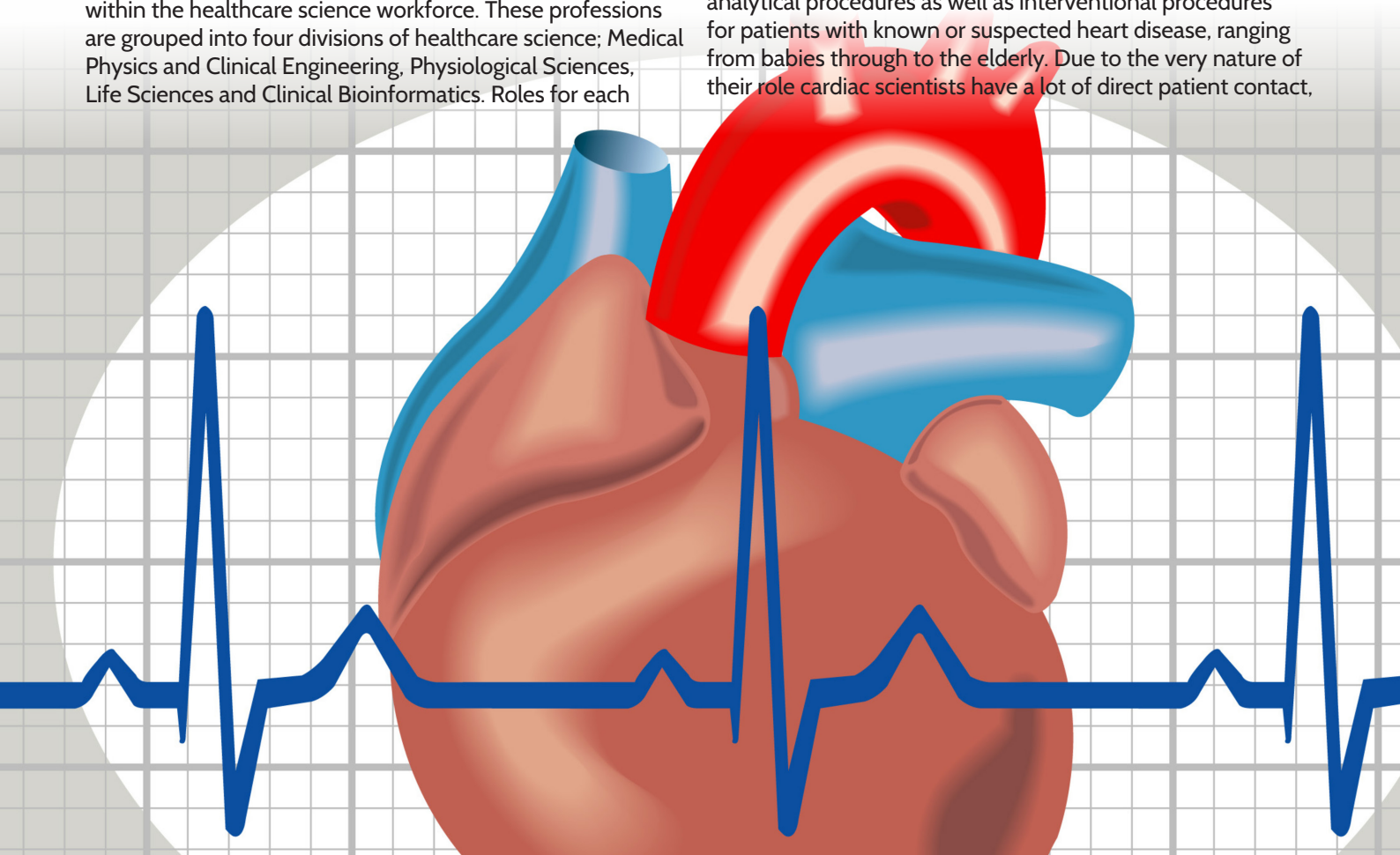
Within most NHS hospitals the healthcare science workforce is likely to be the second largest workforce responsible for delivering diagnostic investigation and interventions. Yet their existence is still largely hidden, not only from their own individual employers, but also from the general public. The skills possessed by this workforce are critical in ensuring that the NHS is able to recover from the current financial pressures and also to deliver robust high quality services across patient pathways from primary, through to secondary and tertiary care. The vital role that healthcare scientists play in providing healthcare will enable transformation of services, enabling them to be delivered to the patient at the most appropriate point of care at any time required.

Approximately fifty different professions are encompassed within the healthcare science workforce. These professions are grouped into four divisions of healthcare science; Medical Physics and Clinical Engineering, Physiological Sciences, Life Sciences and Clinical Bioinformatics. Roles for each profession are broadly described at four levels; assistant and associate, healthcare science practitioner, clinical Scientist and consultant clinical scientist. Within this workforce the Modernising Scientific Careers (MSC) training programme led to the development of a new cardiac scientist role in 2010, which sits within Cardiac, Vascular, Respiratory and Sleep Sciences under the Division of Physiological Sciences.

This hot topic sets out to describe the cardiac scientist role, and to explore how MSC is supplying a workforce with the right skills, knowledge, values and behaviours to deliver 21st century services, as laid out in 'The Delivery of 21st Century Services - The Implications for the Evolution of the Healthcare Science Workforce'.

Role of Cardiac Scientists

Cardiac scientists carry out crucial diagnostic, monitoring and analytical procedures as well as interventional procedures for patients with known or suspected heart disease, ranging from babies through to the elderly. Due to the very nature of their role cardiac scientists have a lot of direct patient contact,



assessing patients during very distressing times in their lives. Working at a more senior level they have a considerable amount of responsibility for performing more complex tests and interpreting the results of each test. Cardiac scientists form part of a large team including cardiologists, cardiology registrars, specialist cardiac nurses, other healthcare scientists (e.g. respiratory or vascular) and administrative staff.
They are expected to teach and supervise other members of the team and will often work in a management role, with responsibility for resources such as staff, budgets or equipment. They need good leadership skills and must be able to use their initiative within the remit of their job role. However due to working closely with patients who are often unwilling or unable to co-operate, cardiac scientists also require excellent communication skills, and a calm, confident, but sympathetic approach.

Procedures carried out in cardiac sciences include:

- **echocardiography -** using ultrasound to obtain pictures of the heart to help diagnose and monitor diseases that affect the structure and function of the heart including heart valves and/or muscle
- **pacemaker implantation and follow-up** - taking measurements and programming pacemaker devices to ensure they are functioning correctly when they are implanted and during long-term follow up
- **exercise stress testing** - closely monitoring a patient as they exercise (usually on a treadmill) to test if the blood vessels supplying the heart are working properly. Can be used as part of diagnosis or monitoring the response to treatment including surgery

Cardiac scientists are usually based within hospital departments, although more recently they have been providing services in closer proximity to the patients within the community setting. (NHS Careers, n.d)

For more information visit NHS Careers

MSC Training for Cardiac Scientists

Training for the cardiac science workforce is delivered via MSC accredited programmes. Programmes are currently available at practitioner, scientist and consultant levels, whilst programmes for assistant and associate levels should be made available later this year.

The structure of the training programmes have been covered in earlier hot topics (links to which can be found in the 'Useful Links / Resources' section of this paper) but to summarise:

- **Practitioner Training Programme (PTP)** - three year programme of study during which a Bachelors degree is completed, along with fifty weeks of work-based learning spread across the duration of the programme
- **Scientist Training Programme (STP)** - three year training programme during which a Masters degree is completed. The majority of the programme is work-based and trainees are employed by trusts for the full training period
- **Higher Specialist Scientist Training** - five year doctoral level training programme during which trainees are employed

MSC has meant that there are now common standards and a curriculum for both the academic and work-based components of the programmes. One of the key benefits of MSC programmes are that they are designed to deliver a flexible workforce able to deliver services differently where service transformation requires it.

Background

Scientific and technological advances not only provide new opportunities to improve the quality of care but also offer the means of changing how and where care is delivered. MSC means that the future workforce is being trained in a way that encourages the rapid adoption of new medicines and technologies and supports high quality and innovative care in new settings closer to home (i.e. from secondary to primary care). The healthcare science workforce is therefore the ideal vehicle to respond to the key drivers of change in the NHS (Government Digital Service, 2010)

Areas of Risk

Within the North West the new training programmes are widely supported, however there are a number of service areas that are not yet supporting placements for the Practitioner Training Programme (PTP). In most cases this lack of support is due to a lack of knowledge of the new training programmes and a lack of recognition and / or understanding (at departmental level) of their responsibility to deliver clinical training in order to develop the future workforce.

Not having a cardiac workforce in place could present significant disadvantages to those services in terms of:

- not having exposure to the future recruitment/talent pool for recruitment purposes
- not benefitting from the new national tariff payments available for healthcare scientists on MSC accredited Practitioner Training programmes
- existing staff not being familiar with the new training routes, learning content, up to date practice, and CPPD opportunities available through Accredited Scientific Practice modules

CASE STUDY – University Hospital of South Manchester

The Cardiac Diagnostic Unit at University Hospital South Manchester (UHSM) has traditionally been a leading centre in developing and delivering education across a wide range of disciplines. UHSM has made a positive commitment to invest in the health care science workforce, which in turn has resulted in positive benefits for its patients. The implementation of MSC has provided UHSM with the opportunity to step up and demonstrate the benefit of this new approach to training. Within the unit the team have embraced the both the Practitioner Training Programme and Scientist Training Program and have made some fantastic strides in developing the future cardiac science workforce.

An initiative taken by the unit has meant that the same high quality service delivered within the department is now being delivered in local GP practices. Simple things such as parking, accessibility and location familiarity have a positive impact on the patient experience. The department has now commenced with the delivery of both echocardiography and arrhythmia monitoring closer to patients' homes and real benefits are now being seen.

Empowerment of individuals

By investing in individuals UHSM has been able to lead change and empower healthcare scientists to deliver services which were previously only deliverable by a doctor. This approach to service redesign is challenging for the individuals who take on these advanced roles, and it is difficult to gain acceptance from those who currently deliver this type of service, to ensure they do not feel threatened by the development of others. Instead the aim is to encourage them to embrace this approach, by providing support as mentors and assisting with development of other staff for the patient benefit.

Stronger Leadership

By utilising initiatives such as the bespoke North West leadership development programmes (funded by the North West Healthcare Science Network), the unit has been able to identify natural leaders within the department. This has enabled them to utilise the skills they have learnt to:

- review services
- consider the benefits of changes to current provision
- drive forward changes in practice to further support patient care

Improved Staff Satisfaction

The early detection of abnormality has led to rapid resolution/treatments. However, the other major hidden benefit has been to the workforce. The initial resistance to change has been replaced by an eagerness to deliver services this way. Less interruption whilst performing the procedure has enabled better patient interaction and the autonomy of independent practice has reignited individuals' passion for their work.

Recognition of Success

The success of the approaches taken by the Cardiac Diagnostic Unit is no more evident than as seen by their newly qualified staff member Samantha Thorn, who completed her PTP in July 2013 and has recently received the 'Rising Star' award as part of the Chief Scientific Officer's Healthcare Science Awards. Samantha has not only excelled in her clinical diagnostic role but has also been identified to undertake the leadership development course to help her fully realise her leadership potential. Samantha is currently acting as a representative on the North West HCS Trainee Network and is fulfilling the important role of delivering information to other HCS disciplines in terms of how the PTP can support their future service needs. It is inevitable that UHSM will deliver a new style of service for patients by developing a new style of workforce. The MSC programme, with the right people, will provide this future workforce.

Keith Pearce (UHSM's Organisational Lead Scientist and Greater Manchester HCS Network chair) and his team also won the 2014 Chief Scientific Officer's award for Rapid Access Functional Imaging and they were the Overall Winner of the 2014 Advancing Healthcare awards event in recognition of their dedication, hard work and passion for developing high quality, community based patient centred service. This is the first time healthcare scientists have been the Overall Winner of the Advancing Healthcare awards. Ian Cumming OBE (CEO of HEE, who started his career as a Biomedical Scientist) said he was *"delighted to see North West healthcare scientists recognised for their unique contribution"*.

How to Embed MSC Training Programmes

Health Education North West is keen to ensure that North West organisations are supporting MSC training programmes for all divisions of the healthcare science workforce, to ensure they have access to this new talent pool. Whereas organisational leadership is a key factor in encouraging support for the MSC programmes within your organisation there are some other simple actions to consider which will greatly assist with gaining support from clinical teams within your organisation.

- Ensure you have a lead healthcare scientist identified within your organisation as they can provide local professional leadership for the HCS workforce and will help build a local HCS network. A role description has been created for the role of organisation lead scientist to assist you in identifying the right person to take on the role; enquiries should be made to Helen Liggett, NW Healthcare Science Network Lead.

- Ensure that your healthcare science led services are engaged with NW higher education institutes to ensure they are supporting MSC programmes. Please contact Nick Fowler-Johnson to discuss which programmes your organisation could support.

Key Dates

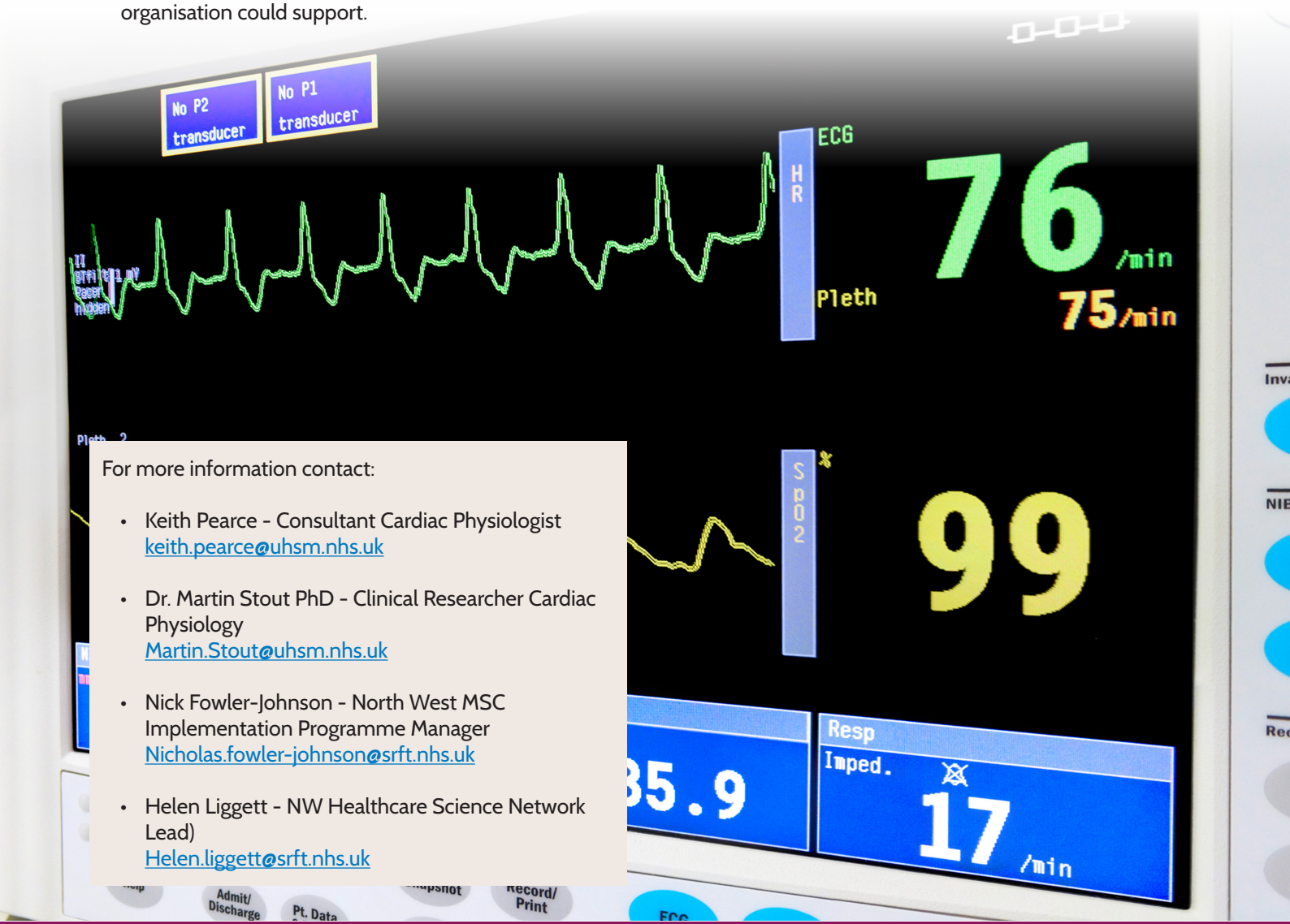
The North West Healthcare Science Network is keen to support the development of local (organisational) healthcare science networks. Please contact either Helen Liggett or Nick Fowler-Johnson for a discussion about holding an engagement event in your organisation.

Useful Links/Resources

- Hot Topic: Modernising Scientific Careers
- Hot Topic: Modernising Scientific Careers - Workforce Evolution in Progress
- Hot Topic: Modernising Scientific Careers - Practitioner Workforce Development

References

- NHS Careers (no date). Cardiac Sciences. Last accessed 23rd April 2014
- Government Digital Service (2010). Modernising scientific careers: the England action plan. Last accessed 23rd April 2014



For more information contact:

- Keith Pearce - Consultant Cardiac Physiologist keith.pearce@uhsm.nhs.uk
- Dr. Martin Stout PhD - Clinical Researcher Cardiac Physiology Martin.Stout@uhsm.nhs.uk
- Nick Fowler-Johnson - North West MSC Implementation Programme Manager Nicholas.fowler-johnson@srft.nhs.uk
- Helen Liggett - NW Healthcare Science Network Lead) Helen.liggett@srft.nhs.uk