

## DIGITAL TECHNOLOGY The NHS Digital Academy – learning from the past to look ahead

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### ABSTRACT

As the NHS Digital Academy programme opens its virtual doors to cohort three, it is a useful moment to reflect on its purpose and learnings, chart its journey from inception and look at future opportunities. Since the launch of the academy, additional contextual factors have surfaced including *The NHS Long Term Plan*, *The Topol Review* and lately a global pandemic; all reinforcing the importance of technology enabled health transformation and the need for digital skills across the NHS.

**KEYWORDS:** Skills, training, Wachter review, digital, workforce

**DOI:** 10.7861/fhj.2020-0166

### Introduction

As the NHS Digital Academy programme opens its virtual doors to cohort three, it is a useful moment to reflect on its purpose and learnings, chart its journey from inception and look at future opportunities. Since the launch of the Academy, additional contextual factors have surfaced including *The NHS Long Term Plan*, *The Topol Review* and lately a global pandemic; all reinforcing the importance of technology enabled health transformation and the need for digital skills across the NHS.<sup>1,2</sup>

In 2016, the Wachter review identified gaps in digital skills and training and a shortage of chief clinical information officers (CCIOs) and chief information officers (CIOs), as well as the importance of a professionalising these roles.<sup>3</sup> In response to this, the academy was the NHS's first ever national health informatics training programme aimed at developing a cadre of CCIOs and CIOs (and similar digital change leaders) to conduct digital transformation across the NHS.<sup>4</sup> The academy has also helped to raise the profile of the digital and health informatics landscape. The intention of the programme is to provide training and development support for approximately 300 senior clinicians, health managers and informatics staff across the UK (primarily for staff in England with a handful of places made available for other home nation staff) over three cohorts, including participants from social care.<sup>5</sup>

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### Why workforce investment in skills and training important?

There are two dynamics to consider on why investment in NHS workforce skills and training is important. Firstly, changing behaviour, culture and poor leadership is often considered as one of the biggest barriers to successful technology transformation in organisations.<sup>6,7</sup> When implementing and using digital solutions, the NHS needs to take account of the workforce, especially clinicians. Secondly, a gap identified in the Wachter review was the absence of a structured workforce development programme for current and future digital leaders, as well as appropriate professional bodies (with standards and competencies) supporting these professionals. The review recommended strengthening and growing the CCIO field, as well as health IT and digital professionals more generally.<sup>3</sup>

The theory of change behind the academy stemmed from this rationale: to provide training and develop a cadre of professionals that can lead the NHS transformation efforts; and to strengthen and professionalise the health informatics profession by providing career pathways and standards. This will then eventually provide a greater uptake of digital solutions and enable successful technology enabled transformation that benefit patient care and the work of clinicians.

The purpose and relevance of the academy has amplified further with a better understanding of emerging technologies including artificial intelligence (AI) and robotics, and the potential impact that these will have on healthcare. The World Economic Forum forecasts an increasing skills instability with around 54% of employees to require some form of reskilling or upskilling.<sup>8</sup> *The Topol Review* also made clear recommendations that the NHS and wider health system needs to develop new programmes of learning to recruit new talent and to establish new career pathways.<sup>2</sup>

### The role of the NHS Digital Academy – the concept

The academy launched with cohort one in April 2018. Initially commissioned by NHS England, the academy now forms an important part of the NHSX / Health Education England digital readiness programme. The delivery of the programme is led by Imperial College London Institute of Global Health Innovation, University of Edinburgh and Harvard Medical School through a digital health leadership learning programme. The initiative has established the NHS as a global pioneer in digital health

education, as evidenced by the interest the academy has received from all over the world, including governments and health systems.

The academy programme is a 12-month, part-time programme. What makes it unique and a template for other programmes in the blended learning approach, delivered mainly online with four in-person residential workshops. The content covers issues including leadership and transformational change, public attitudes to the sharing of data, interoperability of health systems, responding to user needs and artificial intelligence, and analytics. The programme aims to push the boundaries and give an understanding of the 'art of the possible,' an important skill for transformational leaders.

The in-person residential workshops provide participants the chance to network and build meaningful relationships, learn from each other through learning sets and address specific challenges facing the candidates. The participants are divided into regional networks, so they can provide peer support for the remainder of the time and meet more regularly. Online material is accessed via an Imperial College London learning portal and this platform provides clear signposting for reading and also enables support. This has provided a cohort of networked individuals and an alumni network. On successful completion of the programme, candidates receive a postgraduate Diploma in Digital Health Leadership from Imperial College London with the option of taking further credits to complete a subsequent Master's qualification.

Cohort one and two demographic analysis (see supplementary material S1) highlights the breakdown of participants by gender, geography and variations in their roles. In the context of a year-on-year increase in the number of applicants, the academy has seen more women now participating in the programme. A limitation that has been identified is the lack of data reflecting the breakdown by ethnicity and this is a key area of focus for us to ensure inclusivity and diversity for digital health leadership in the system as well as a fully representative learning experience.

### The modules of the programme

The programme consists of six modules, which are structured around assessment deadlines.

#### Essentials of health systems

This module provides a foundation of knowledge for the modules that follow, introducing the essential stakeholders and structures in health systems and the key principles for evaluating the impact of process, policy or product changes within a system.

#### Implementing strategy and transformational change

This module works through tools and techniques to implement transformational change in health and social care, focusing on human interactions and including strategy setting, risk management, leveraging opportunities and working with partners.

#### Health information systems and technologies

This module is a framework for understanding digitally enabled change, understanding distinctive features of the complex health digitisation landscape and understanding how these systems evolve and the relationship with change management and benefits.

#### User-centred design and citizen-driven informatics

This module provides an understanding of the needs, expectations and experiences of healthcare users (the philosophical and practical reasons for engaging and involving people in the design process) and analysing design methodologies.

#### Decision support, knowledge management and actionable data analytics

This module has a broad overview of learning health systems and the workflow for data analysis, including elements of time-series analysis, signal processing and machine learning. It includes data collection, data quality management and study design.

#### Leadership and transformational change

This module provides an understanding of key concepts in leadership; engaging and building relationships with stakeholders; ensuring digital innovation is central to strategic development; and how to lead transformational change in the workplace.

### What has the academy learned so far?

The first two cohorts have been a steep learning curve. This has included overcoming initial challenges in on-boarding candidates, considering a smartphone-accessible first offering and differentiating between core and supplementary readings to ensure a balanced workload. The academy is building on these learnings for cohort three (commenced in September 2020) including updating the content of the programme to keep up with the latest developments. As the start date for cohort three was impacted by the COVID-19 pandemic, this has led to establishment of a virtual learning and development structure, aimed at maintaining the high-quality learning.

Additionally, working with the Faculty of Clinical Informatics (FCI) and Federation of Informatics Professionals (Fed-IP), the academy is in the process of ensuring professional accreditation of the programme, further strengthening the professionalism of digital transformation leadership and refining core competencies.<sup>9</sup> A key success factor of the programme will include graduating participants seeing opportunities to move into more senior roles within the NHS with greater authority and autonomy. The NHS should also see graduates directly driving positive impact on health service transformation enabled by digital technologies. Additionally, the blending of people from primary, secondary, community, social care and technology has been recognised as a key success for the programme.

The programme has been consistently and significantly over-subscribed. Applicants submit a curriculum vitae and are assessed through a standard application questionnaire which focuses on their experience, aspirations, the perceived value of the learning for them, and set out a project in which to apply the learning. Through participant feedback supported by an evaluation exercise carried out by the Institute for Employment Studies, the programme has overall been rated very positively to date. It has demonstrated a particularly strong academic success rate, and tutors also reported a really positive experience. Some highlights through interviews with participants include the success of the modular structure in the eyes of the participants:

*Participant interviewees liked the modular structure and generally felt that the domains covered were very important. A few interviewees said that they learnt something of relevance from every module and participants expressed a varied range of views about which modules they found most engaging and applicable to their role, which could be indicative of the diverse range of backgrounds of academy participants.*

The learning programme also has had a positive onward impact for many:

*Participants expressed a range of ways in which the academy personally impacted them. These included an increase in confidence, establishing a network of peers, broadening of their perspective, and an increase in their visibility at work.*

In addition to programme feedback, the evaluation identified that the academy having an impact on the individual level, the NHS organisation level and at the system level.

### Impact at the individual level

At an individual level, participants expressed a range of ways in which the academy has personally impacted in three core ways via an increase in confidence, establishing a network of peers and an increase in their visibility at work.

#### Confidence

The majority of participants report that they have gained confidence as a result of participation in the academy, with some mentioning that they undervalued themselves in the past. In particular, participants are more confident when commissioning digital projects and talking with suppliers. The creative procurement guide made them think about what questions to ask suppliers and empowered them to find leverage when negotiating a price.

#### Network of peers

One of the most commonly cited benefits that participants report from having participated in the academy is the network of people that they have built and gained. Many participants maintain this network through social media, by both sharing information and checking in on what others are doing. By doing so, participants can continue the academy peer mindset in both local and national settings.

#### Visibility in the system

In terms of career progression and developing a national profile, a few participants expressed the view that they have increased their visibility outside of their trust. Some participants have been able to take their learning onto the national stage at conferences and through publications. This has helped to spread the word about what they are doing, as well as to increase their exposure to projects.

Such experiences are demonstrating the learning from the academy is starting to have an impact at the individual level.

### Impact on NHS organisations

At an NHS organisational level, participants have struggled to identify the direct impact, measured quantitatively, that their

participation has had on their organisation. Several participants were able to identify some areas of impact, as well as indirect impact and potential measures of success.

This includes pushing back on suppliers to get a higher value return and driving longevity and sustainability when implementing systems.<sup>10</sup> Other organisational indicators of the academy's success could be considered to be soft skills. These include changes in the way participants:

- > implement and approach certain projects
- > manage suppliers and engage with end users to make products and services more suitable
- > involve staff in design sessions
- > contribute to strategy development.

### Impact on the wider system

The ability to assess impact on a wider system level has been limited at this stage due to not enough time for this to be more fully realised. Participants do believe there has been a positive impact and it will become more visible through ongoing evaluation.

Additionally, some participants said that it will be difficult to identify what impacts are specifically attributable to the academy due to many coexisting variables having an impact on digital transformation in the field.

From a learning perspective, barriers still exist at the organisation and system levels and these need to be addressed so the academy, the informatics profession and digital transformation can achieve its full potential. Some of these include organisational engagement and senior leader buy-in, board level engagement, defined career pathways and demonstratable career progression with suitable roles. As part of the application process, participants need to seek senior, executive level sponsorship and there needs to be greater leverage from this so that participants are fully valued across the organisation.

### Where is the NHS Digital Academy headed?

The NHS is at an inflection point with the COVID-19 pandemic. This moment provides the system the opportunity to provide greater access to health and care through digital solutions as well as investing in and developing the NHS workforce. The academy to date has focused on developing change leaders (typically CCIos and CIOs) but there is a need to develop a pipeline of talent from those starting their careers upwards. Additionally, the NHS Digital Academy model needs to be established as the home for all digital learning and learning programmes, including the current learning programme offering, in the future. It needs to serve people's digital learning and development needs across all stages of their career pathway.

There are three key areas which will need to be addressed to ensure sustainability of the academy but also to have a positive impact on the NHS. Firstly, to build a strong, diverse and proactive talent pipeline. Secondly, to ensure alignment with mainstream NHS leadership development. Lastly to coordinate opportunities linked to professionalism for the whole digital workforce as well as those who have a need for digital knowledge and development. The academy needs to be representative of the workforce and also the different settings the NHS operates in including mental health, community and social care. The academy will provide a host of learning opportunities for all levels and one that reaches a

far larger number of people through more open source and easy to access development opportunities.

The foundations, through the early success of the academy, have now been built. Using this the platform to train, recruit and promote individuals and to provide a blended learning template for other programmes, the system can showcase the positive impact participants are having on the health and care system. ■

### Supplementary material

Additional supplementary material may be found in the online version of this article at [www.rcpjournals.org/fhj](http://www.rcpjournals.org/fhj):

S1 – Demographic analysis.

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