



Recruitment and retention of the health and social care digital workforce: A rapid review

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Report authors: Dr Julie Prowse, Dr Claire Sutton, Professor Rebecca Randell

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1.0 Introduction

The recruitment and retention of a digital health and social care workforce in the United Kingdom (UK) is challenging for several reasons that include the shortages of these employees in the National Health Service (NHS) and social care and the high demand for digital skills from other sectors (HEE, 2021a; NHS Providers, 2017). Brown (2022:7) notes that ‘high staff turnover rates, chronic recruitment and retention issues, and low morale are increasingly identified as major challenges for those working in social care’. Liu et al., (2019:5) in their report ‘NHS Informatics workforce in England: Phase 1 Project Report’ estimated that the size of the NHS informatics workforce in 2019 was between 40,640 Full Time Equivalents (FTEs) to 53,936 FTEs based on electronic staff records. However, significant shortages in digital and information technology staff in health and social care were identified that pose a challenge. This rapid review examines the strategies used to recruit and retain the health and social care digital workforce and potential solutions to issues raised.

2.0 Methods

In order to obtain recruitment and retention literature for the digital health and social care workforce, searches were undertaken using Google, Google Scholar, and Scopus. A summary of the search results is presented in Tables 1 and 2. In addition, relevant websites identified were reviewed and included: NHS Employers, Department of Health and Social Care, Kings Fund, The Health Foundation, Skills for Health, Skills for Care, Health Education England, and the NHS Digital Academy.

The literature identified was manually screened for relevance. The inclusion criteria were reports, policy documents, articles, blogs, and websites that covered the recruitment and retention of the digital workforce.

Table 1: Summary of search terms and items for Recruitment

Search tool/database and search string healthcare and retention	Number of items retrieved	Notes
Google “digital workforce AND recruitment AND healthcare” 9/10/22 “digital workforce AND recruitment AND healthcare 14/10/22	30,600.600	Some pieces specific to digital workforce 184 records reviewed across 15 pages and 23 reviewed in detail
Google Scholar “(digital workforce) AND recruitment AND healthcare	64,3000	15 pages of results reviewed and 2 reviewed
Digital workforce and social care and social services and recruitment		
Google “digital workforce” AND recruitment AND social services AND social care”	30,800	Most literature general – 14 pages 186 records and 9 retrieved
“digital workforce” AND recruitment AND social services”	33,300	Most literature general 14 pages 253 records and 4 retrieved
“digital workforce” AND recruitment AND social care”	40,100	Most literature general or web sites – 14 pages 184 records and 8 retrieved

Google Scholar "digital workforce" AND recruitment AND social services AND social care"	1,580	Reviewed 10 pages and 2 articles retrieved.
"digital workforce" AND recruitment AND social services	1,680	Reviewed 10 pages and 0 retrieved
"digital workforce" AND recruitment AND social care	1,590	Reviewed 10 pages and 0 retrieved

Table 2: Summary of search terms and items for retention

Search tool/database and search string healthcare and retention	Number of items retrieved	Notes
Google "(digital workforce) AND retention AND healthcare" (No date)	7 500 000	Most literature about the digital/IT literacy/competency of the health/care workforce in general.
"informatics workforce in health" (No date)	9 850 000	Most literature about digital competency of the health/care workforce
"informatics workforce in health" (14.10.2022)	3	
"informatics workforce in health" (17.10.2022)	10 500 000	152 records reviewed across 11 pages of results
"retention of informatics workforce in health" (17.10.2022)	2 220 000	32 records reviewed across 3 pages of results
"retention of digital workforce in health and social care" (17.10.2022)	36 900 000	41 records reviewed across 3 pages of results
Google Scholar "digital workforce AND retention AND healthcare" (17.10.2022)	0	10 pages of results reviewed
"health informatics workforce AND retention" (17.10.2022)	24 000	
Scopus Variety of terms: digital workforce health, health informatics workforce (No date)	< 100	0 of relevance
Digital workforce and social care and social services and retention		
Google "digital workforce" AND social care	54 200	First 20 items reviewed, 3 of relevance, with 1 new
"informatics workforce" AND social care	14 900	First 20 items reviewed, 2 of relevance, with 2 new
"digital workforce" AND social services	136 000	First 20 items reviewed, 0 of relevance
"informatics workforce" AND social services	13 700	First 20 items reviewed, 0 of relevance
Google Scholar "digital workforce" AND social care	1 180	First 20 items reviewed, 0 of relevance
"Informatics workforce" AND social care	4 610	First 20 items reviewed, 1 of relevance
"digital workforce" AND social services	2 250	First 20 items reviewed, 0 of relevance
"informatics workforce" AND social services	4 680	First 20 items review, 0 of relevance
Scopus In: Article title, Abstract, Keywords "Digital workforce" AND social care	0	None of relevance
"Informatics workforce" AND social care	1	
"Digital workforce" AND social services	1	
"Informatics workforce" AND social services	0	

3.0 Findings

Thirty-two items were identified that had a focus on health and social care recruitment and thirty-one for retention. The literature reviewed included government reports from England, Wales, and Scotland and international sources, policy documents from centres such as the Kings Fund, The Health Foundation and Nuffield Trust, one web page that focused on the digital workforce and one blog that provided commentary on the recruitment of the digital workforce. In addition, some of the policy literature reviewed, although not specifically targeting the digital workforce, contained recruitment and retention government measures directed generally at the health and social care workforce; these were included as it was anticipated these will be of relevance for the digital workforce. Overall, the searches found there was limited literature on the recruitment and retention of the digital workforce, particularly for the social care workforce.

The review identified several issues that have broader implications for the recruitment and retention of the health and social care digital workforce that need to be initially considered.

3.1 General issues affecting recruitment and retention

There is a paucity of literature available to identify and define the health and social care 'digital' workforce and the terms used for roles are variably identified and defined in the literature. Hersh (2010) noted a lack of research relating to the health information technology workforce. However, Hersh (2010) also recognised this was a diverse workforce with far-ranging skill sets and variable titles. For example, the Federation for Informatics Professionals in Health and Care (FEDIP) refers to the 'informatics profession' (2022, n.p.). Smith et al. (2011:130) noted there was little known about the 'health and clinical informatics workforce'. While Butler-Henderson et al. (2019) described Australian 'Health Informatics' as, 'a nascent profession' for which there has been minimal understanding.

Various studies have attempted to clarify digital roles and developed different categories that encompass the health and social care workforce. Marc et al.'s (2019) work in the United States of America (USA) created four clusters covering health informatics and information management roles with cluster one pertaining to technical skills and knowledge relating to data, software, design and technology; cluster two was clinically focused; cluster three (the largest group) related to sales, market, research, client, business – terms relating to project management; cluster four related to compliance including safety and regulation. In the UK, Liu et al. (2019:73) identified the NHS informatics workforce was dispersed over seven categories namely, 'clinical informatics, informatics education and training, informatics strategy and development, information and communication technology, programmes and projects, information management and knowledge management.' The majority (92%) work in clinical informatics, information and communication technology and information management with the remaining staff (8%) in the other areas (Liu et al. 2019). Public Health Scotland's (2020) literature review focused on staff who worked in knowledge, information, and data (KIND) as key within the informatics workforce. The roles KIND staff cover include data and information analysts and managers, library and knowledge staff and data scientists. Health Education England (HEE) (2021b) refers to the 'digital' workforce as the 'digital and informatics workforce' as well as those from clinical services and clinical science backgrounds involved in bioinformatics.

In terms of the social care workforce and roles, Burtney and Townley's (2016: 4) survey of the digital workforce in adult social care identified a 'range of roles including managerial (both specific data and information management as well as other more generic positions), administrative (again specific and



more general) analytical and IT related roles – reflecting the wide-reaching use of data and information in service delivery.’

As the literature illustrates there is not a standardised approach to determining health and social care digital jobs. Gray et al. (2019: 7) described the digital health information workforce as the ‘ghost in the machine’. Rigby et al. (2011: 545) noted that ‘social care informatics has not only received far less attention and investment than health care informatics, but also has hitherto been outside the health informatics family ...’. It therefore might be suggested that a workforce with a strong, coherent, recognised identity described by a common language and clearly defined role titles that are understood universally would help employees’ sense of job security and value as well as aiding both the recruitment and retention of the digital/informatics workforce of health and social care sectors.

3.2 Factors affecting recruitment

The policy context literature reviewed illustrates the factors driving the recruitment and retention of the digital workforce and highlight the problems with ongoing demand for these employees, labour shortages and the importance of recruiting and retaining people with the ‘right skills’ (DHSC, 2019, HEE, 2021a).

3.2.1 Digital labour shortages

Liu et al. (2019) estimate that by 2024 the size of the health informatics workforce will be between 48,199 and 63,968 FTEs. Increasingly health informaticians are required yet the employment infrastructure to recruit, retain and develop these professionals in the health and social care sectors globally appears limited. Several policy documents specifically focus on the health and social care digital workforce and illustrate the supply and demand issues that affect recruitment and retention.

The Topol Review (2019) was commissioned to advise on how technological developments were likely to change the roles and functions of NHS clinical staff over the next two decades to ensure safer, more productive, more effective, and more personal care for patients; what the consequences of these changes were for professionals’ skills; and the education and training implications. It was argued that digital technology and a health informatics workforce (the ‘digital workforce’) in the NHS that was capable of supporting and sustaining the transformation of health services was required. The Topol Review (2019:7) acknowledged that the recruitment and training of professionals with computer science, data science and engineering skills was critical to reducing the artificial intelligence (AI) and robotics ‘skills gap’ in the NHS. A report by the Digital Health and Care Innovation Centre (2021), examining the Scottish situation, projected a 69% increase in demand for digital and data specialists. Similarly, HEE’s (2021a:9) report ‘Data Driven Healthcare in 2030: Transformation Requirements of the NHS Digital Technology and Health Informatics Workforce’ stressed that an increase in staffing levels and changes in the composition of the NHS digital technology and health informatics workforce between 2020 and 2030 is needed if the digital transformations cited in the Topol Review (2019) and the NHS Long Term Plan (DHSC, 2019) are to be achieved. While the policy paper, ‘A plan for digital health and social care’ (DHSC, 2022) stipulated that it would enable recruitment, retention, and growth of the Digital, Data and Technology (DDaT) workforce to meet challenging projected health and care demand by 2030’, it did not indicate how this will be achieved. A key issue identified in the literature affecting recruitment is the growing demand for digital employees in health and social care and industry and the resultant competition between these sectors to recruit these staff (Topol, 2019, HEE, 2021a, HEE, 2021c). Sollof (2022) noted technology implementation in the NHS was limited due to a shortfall in skilled staff, with 3000 digital and data roles vacant.

HEE's (2021c) report, 'The future of NHS demand for digital, data and technology roles' provides an overview of the health and social care digital workforce and identified areas of growing demand, but noted the difficulties with recruiting digital roles, particularly cyber security skills, data science and cloud-based skills. To illustrate this point, the number of advertised jobs for cybersecurity increased from 27,822 in 2017, 41,065 in 2018 to 49,992 in 2019 and this demand is expected to continue to grow (HEE 2021a:118). Vacancies for digital skills vary with geographical location across the UK and regional pay variations are a factor potentially affecting the attraction and recruitment of digital staff to health and social care (HEE, 2021a:31). Liu et al. (2019) reiterate the difficulties with recruiting data scientists and analysts, AI and machine learning specialists, and database and network professionals. Their analysis of recruitment and retention trends shows, as an example, that the NHS informatics workforce are mainly comprised of experienced (potentially older) staff compared to employees joining early in their careers (Liu et al., 2019:45). A similar finding was highlighted in Burtney and Townley's (2016) survey of the digital workforce in adult social care which revealed that it is comprised of an experienced workforce, with 33% of respondents having more than 10 years' experience, 23% of respondents with 3-5 years' experience and 19% 1-2 years. This data suggests a social care digital workforce that is established and with good retention rates.

3.2.2 The right skills

Several pieces of the literature reviewed stress the important of recruiting and retaining digital staff with the 'right skills', typically described in terms of analytical or digital skills. The HEE (2019a:2) report 'Health Informatics Career Pathways Project Report A' noted issues with not utilising the digital workforce skills or creating an environment in which these are effectively used and stated:

Without a better understanding of this, the NHS will continue to face recruitment and retention problems in this area, and individuals risk continuing to languish in unhelpful roles not putting their skills to good use.

The Department of Health and Social Care (DHSC,2018) issued, 'The future of healthcare: our vision for digital, data and technology in health and care' and set out the vision for services and IT systems but noted that to deliver this agenda 'the right skills in the NHS, social care and across the system' are needed. Four priorities were outlined and include 'skills and culture' which stipulates that 'We need to recruit and retain specialist non-clinical professions, such as a highly skilled and well-resourced data science and analytics workforce to make the best use of all the data we will unlock' although no recruitment measures are mentioned (DHSC, 2018). A report by Bardsley (2016:19) 'Understanding analytical capability in health care' explores the issues with recruiting analysts to the NHS and presents a recruitment model that captures the main factors influencing recruitment in terms of labour supply and demand. A key determinant of recruitment is, 'having the right people with the right skills' and to achieve this it is noted that, 'many larger organisations use a combination of graduate recruitment and in-house training programmes, linked to local frameworks of competencies and promotion' (Bardsley, 2016:19). Similarly, the Digital Health and Care Innovation Centre (2021:13) in their review of Scotland's digital Health Strategy observe that building a skilled and connected workforce operating with a digital-first culture requires three cross-organisational opportunities related to workforce development: (1) Getting the "right people" in place to create the desired type of digitally supported organisation; (2) Having "right skills" available in the organisation, either through recruitment or upskilling and reskilling of existing employees in digital working; and (3) Developing the 'right workplace culture that will embrace and support digital ways of working.'

3.2.3 The lack of a workforce plan

A key issue mentioned in the literature that affects recruitment and retention is the lack of a strategic workforce plan for the digital workforce (NHS Providers, 2017; HEE, 2021a). To address this issue, it is proposed that a workforce plan is needed that includes a recruitment and retention strategy (NHS Providers, 2017; HEE, 2021a). HEE (2021a:20) recommend the development of a 10-year workforce plan that focuses on supply factors. Beech et al., (2019:58) in their report 'Closing the Gap', examine the problems with the recruitment of all health care staff. They suggest that traditional workforce planning (if it takes place) has focused on the training pipeline, but to provide the future workforce requires workforce modelling/planning, investment in skills development and role redesign with the current workforce. A study of European social services by Lethbridge (2017) noted that 'In order to make recruitment and retention a central issue for the organisation, they have to be seen as part of the planning process' and that involvement of the whole organisation, as opposed to just human resources has improved recruitment and retention in health and social care organisations.

The use of operational workforce plans for recruitment is mentioned in four pieces of literature and often as part of a wider workforce recruitment and retention strategy, although not always specifically directed at a digital workforce. For example, NHS Education for Scotland (NES, 2019) in their annual operational plan include details of their recruitment and retention approach. As part of delivering the NES strategy one of the five key areas identified is the need for 'a national infrastructure to improve attraction, recruitment, training and retention' for all staff (NES, 2019:5). To deliver this agenda measures proposed are, 'widening access to higher education and improving recruitment in key areas' and promoting 'greater awareness of career opportunities in health and care for young people and school leavers' (NES,2019: 9).

NHS Wales (2020:14) developed a 'Workforce and Organisational Development Framework' that incorporates 'Domains' which includes 'workforce resourcing' and covers recruitment and retention. The framework contains many of the measures already mentioned but suggests 'local recruitment days that are regionally organised to avoid duplication and advertising jobs across different social media platforms' and developing an ethos that, 'it's a good place to work.' The Skills for Care (2017:24) report, 'Recruitment and retention in adult social care' presented survey results from social care employers. They cited the importance of having a local workforce plan in place to manage recruitment, coupled with using 'values based recruitment' to ensure the selection of people with the 'right skills' and improve retention.

As part of a strategic approach to workforce planning the necessity of retaining digital health and social care staff was noted in the literature. Millen (2003: 835) identified various reasons for the NHS digital workforce leaving employment: lack of appreciation, poor working conditions, lack of career opportunity and access to training and development opportunities, lack of profile, poaching by neighbouring organisations, pressure of work, organisational uncertainty/change, and the NHS not 'leading edge' enough. In contrast, Coombs (2009: 239) sought to elucidate why IT professionals stayed in the NHS noting, 'the more that IT professionals identified with the NHS, the more likely they were to stay.' The reasons they cited for remaining were mainly altruistic and that they perceived their work contributed to 'improving patient care', their work mattered and helped to save lives. Coombs (2009: 835) also highlighted the importance of effective teamworking for retention as well as employees' impression that public had a positive view of their employer and organisation. The study found that while employers have concentrated on salary and flexible working arrangements to aid

recruitment and retention, employees valued autonomy, interesting work, and opportunities to implement advances in technology.

3.2.4 Pay

Six pieces of literature reviewed specifically mentioned pay and the issues associated with the national NHS pay structure Agenda for Change (AfC) as major barriers to the recruitment and retention of the digital workforce (Castle-Clarke and Hutchings, 2019:62). HEE (2019a: 16) argued that problems with the recruitment and retention of digital staff were exacerbated by the limitations imposed by the AfC pay scales applied for health informaticians:

The motivations collectively highlight that individuals tend to have optimism and positivity initially; it should not in theory be difficult to attract people into roles from the outset, especially with early careers and entry level roles. The danger comes with retention when they wish to progress and further develop their skills, or attracting individual into specialist or senior roles due to constraints around NHS Agenda for Change ...

A study by NHS Providers (2017) found 38% of respondents cited pay and reward as challenges for the recruitment and retention of staff. Castle-Clarke and Hutchings (2019:2) noted that AfC hindered the ability of the NHS to compete with the private sector for digital workers and this is partly due to the AfC pay bands and where digital staff are located on them tends to be significantly below private sector pay. Attempts to address this and aid recruitment include offering different contracts and sharing staff across organisations, however both measures are not considered as long-term solutions to recruitment difficulties (Castle-Clarke and Hutchings, 2019:37).

Oung. et al., (2021:2) in the report 'Developing the digital skills of the Social Care workforce' commented that poor recruitment and retention trends in the social care sector are due to low wages, unclear pathways for promotion and limited pay rises. Brown (2022) concurs with this and highlights that a key factor behind poor recruitment and retention rates in the social care sector is low pay and is often the reason cited for staff leaving. NHS Providers (2017:22) and HEE (2021a:14) suggest the need to recognise that both monetary and non-monetary reward are important factors for the recruitment and retention of in-demand staff in certain areas of digital technology and data analytics. The literature review also found that attitudes towards pay and reward varied and for some employees' intrinsic reward (enjoying the job, feeling valued) and role recognition are more important, although pay is still a factor for recruitment (Beech et al., 2019:30). Non-monetary factors tend to be linked to employment conditions that help to attract and recruit the digital workforce and include, workforce diversity, offering flexible working and return to work arrangements, opportunities for training, continuing professional development (CPD) and career progression (HEE, 2021a).

3.2.5 Role recognition

The literature identified that another constraint to the recruitment and retention of staff to digital roles in health and social care is that the work is sometimes perceived as low job status and categorised as administrative and clerical, and not professional scientific and clinical occupations (HEE,2021a:135). Castle-Clarke and Hutchings (2019:38) argue that non-clinical digital roles have historically been undervalued by the NHS and not recognised:

'People felt that, unlike other areas, informatics as a field has not been professionalised, meaning there is a lack of coherence around job descriptions

and the skills and qualifications required and leading to significant variation across the NHS’.

HEE’s report (2019a:17) discussed that for the band 7/8a digital workforce to advance their careers there were limited options, particularly if they did not want to go into ‘management’ because it was perceived as not a prestigious role or ‘adding value’. NHS England (2019a:17) noted that responses like this ‘indicates some cultural issues where staff may not respect and value their own managers if they do not understand what they do’.

Arguably, a lack of clear digital workforce identity and definitions of key roles and their contributions to health and social care service delivery may potentially reinforce the issues discussed and affect retention. Digital health and social care workers may leave to work in sectors outside of health/social care where their skills and knowledge, roles and professional identities are better recognised, articulated, and valued. Impoverished professional identity reduces the recognisable contribution of the digital/informatics workforce in health and social care sectors globally.

4.0 Solutions for the recruitment and retention of digital staff

This section presents solutions proposed to recruit and retain digital health and social care staff. Some of the measures have already been mentioned previously but will be explored in more detail.

4.1 Workforce planning

As mentioned, HEE (2021a:20) recommend the development of a 10-year workforce plan that focuses on supply factors and stress that ‘long-term planning will be critical if the digital workforce is to expand its capacity and capability required’. They suggest several measures to increase recruitment and support retention that include: an education and training pipeline, professional development (re-skilling and upskilling) for the health and social care digital technology and health informatics sector. Furthermore, the workforce plan needs to consider planned service design (including how digital technology and data services would function within integrated care systems), the productivity of the digital workforce, and factors (including labour market conditions) affecting supply (HEE, 2021a:20).

NHS England and NHS Improvement’s (NHSE/I 2021:24) report, ‘The future of NHS human resources and organisational development’ outline eight themes to deliver the vision for health and social care for 2030, integral to this are a series of human resource actions. It is anticipated these actions are applicable for all staff so have relevance for the recruitment and retention of the digital workforce. The actions include: the need for recruitment processes to ensure diversity and inclusion, the necessity to have a talent management strategy and recruitment and careers pathways that address under-representation and lack of diversity, the design of recruitment processes that focus on skills, streamline recruitment processes to ‘create a ‘frictionless’ recruitment pathway that improves the candidate experience, the use workforce plans to help shape the local and national education and training needs, recruitment and retention and workforce transformation plans in place and the use of larger-scale recruitment rounds that cover multiple providers (NHSE/I, 2021:26). Traditional methods for recruitment such as adverts, use of social media and interviews are still proposed. Furthermore, targeted recruitment advertisement campaigns such as the ‘We are IT, We are Support’ are also being used to encourage people to apply for digital NHS roles.

Buchan et al., (2019:32) examined recruitment and retention across health professions, concentrating particularly on nurses, however, their conclusions may have implications for the digital workforce. The report (Buchan et al., 2019) concluded that international recruitment is vital to achieving overall staffing numbers but is constrained by migration policies and a lack of a coherent government approach to international recruitment in the NHS in England. They propose a more strategic and 'joined-up' approach is required, involving government health and social care departments, the Home Office, regulators, and employers; one that is embedded in overall national health workforce planning.

HEE's (2019a: 14-22) 'Health Informatics Career Pathway' project reported on 507 survey responses from NHS health informatics employees with the aim of understanding how recruitment and retention may be improved for this workforce. Five key recommendations were made:

- 1) Articulate health informatics career pathways across the NHS with a need to agree specialist areas, create meaningful job titles and descriptions in line with industry standards.
- 2) Nationally support recruitment and retention.
- 3) Define the professional body offer and understand health informatics network opportunities with a real opportunity for professional bodies and local training networks to support individuals. Once more consistency of language was noted as limited and a debar to realisation of opportunities.
- 4) Regional or system approaches to developing an informatics workforce were advised to tackle workforce challenges at scale with joint initiatives and supportive regional and national networks.
- 5) Involve senior leaders to promote a culture of understanding for what health informatics staff need to do their job effectively. A strong collective voice of health informaticians that must be recognised as integral to service transformation.

In Wales, Health Education and Improvement Wales (HEIW) (2020) developed a workforce strategy for health and social care as a ten-year plan, with acknowledgement that that situation for social care was particularly problematic due to increased demand for services and the lack of staff. The solutions proposed included the 'requirement for true collaboration and partnership at all levels, together with 'better alignment and integration across professional boundaries' (HEIW,2020:9).

4.2 Good employer

Another area identified in the literature as important for the health and social care sector, particularly in areas where there is high demand for digital workers, is the need to be regarded as a 'good (model) employer', 'an employer of choice' and 'somewhere people want to work' (Beech, et al., 2019, Topal, 2019). Several reports suggest how this can be achieved. Morley (2022) proposes a national digital workforce strategy, with the health and social care system setting out a framework for bridging the skills gap and making the NHS an attractive place to work. Patel and Thomas (2021:4) outline a workforce strategy, 'that aims to 'support staff who are struggling; retain those considering leaving; and attract new people to join the sector'. Suggestions to deliver this agenda include expanding workplace benefits and promotion opportunities, tackling institutional racism and the NHS to 'become the best place to work'. Other measures that attract employees is offering flexible working and ensuring a work life balance (NHS Providers, 2017:21).

4.3 Pay

Hutchings (2019) noted that in a competitive skills market, recruiting individuals with digital skills is difficult and that appropriate career pathways and pay frameworks are required to attract and retain staff. However, pay anomalies in the health and social care sectors are cited in the literature (Castle-

Clarke and Hutchins, 2019; Oung et al., 2021). To address these issues some of the measures mentioned include a review of the financial reward structures, particularly the existing NHS AfC pay arrangements for the digital workforce (NHS Providers, 2017, HEE, 2021a:14). It is recommended that this exercise is undertaken in consultation with NHSX, NHS Employers, NHS Providers, and the NHS Pay Review Body and that it incorporates any total reward package for IT staff developed (HEE, 2021a:14). Beech et al., (2019:28) suggest to avoid the potential for the piece-meal implementation of targeted pay rises, the Pay Review Body should provide a coherent recruitment and retention-driven framework and that if labour shortages are identified be able to recommend pay premia and 'golden hellos'. Furthermore, pay should increase in line with the wider economy rates to attract and retain digital staff and prevent the current workforce from leaving due to poor remuneration (Beech et al., 2019:32). In terms of social care, Brown's (2022:6) report 'The Social Care Workforce: Averting a crisis', although referring to the general social care workforce, recommends that:

Social care providers should mirror the NHS Agenda for Change pay scale. This will not only support good retention, as it is less likely staff will be lost to similar NHS roles but will also aid in recruitment. This will also aid integration of health and social care, facilitating better working within multidisciplinary teams.

Currently various ad hoc approaches to pay operate in the social care sector, therefore the British Medical Association (BMA,2020:10) propose that an AfC national pay system needs to be introduced to improve pay to rectify this. Skills for Care (2017:22) note that not all employers pay the National Living Wage (NLW) and argue to attract and retain staff this needs to be paid by all social care organisations and above the NLW rate set by government. They stress to improve recruitment and retention to the sector there is also a need to change the view that 'social care is poorly paid'. However, all the literature reviewed, although mainly directed at the entire social care workforce, stressed poor pay, and working conditions as an issue. Arguably the rapid review shows that a recruitment and retention strategy that centres a review of the pay scales by which the digital/informatics workforce is remunerated might be seen as essential, but also to promote parity for informatics staff across industries including health and social care.

4.4 Role recognition

The lack of role recognition for the digital workforce is another factor affecting recruitment and retention. Overall, there was limited evidence retrieved in relation to professional representation of the 'digital' or 'informatics' workforce in the health and care sectors and the main sources are webpages.

Some of the solutions proposed to potentially increase recruitment and retention are directed at professionalisation and formal recognition of the informatics field, aided by the growth of professional bodies covering the digital workforce that are working towards formal recognition (Castle-Clarke and Hutchings, 2019:40). Examples of these are, the Federation for Informatics Professionals in Health and Social Care (FEDIP) who launched the [FEDIP Charter](#) 'to promote a formally recognised and supported profession for all health and care informatics practitioners'. The [Association of Professional Healthcare Analysts](#) (AphA) website states, 'AphA means ultimately achieving professional registration status for its members', The [Faculty of Clinical Informatics \(FCI\)](#) web site states that 'CFI is a multi-disciplinary professional body for all health and social care qualified individuals working as informaticians across the UK' and aims to support the establishment of clinical informatics as a recognised profession by

providing professional standards, accreditation, learning and development and recruitment. Another example cited in the literature is the North West Informatics Skills Development Network (NWISDN) who support the learning and development of the informatics workforce through training, sharing best practice events and fostering professional networks. Morley (2022:np) recommends creating a membership body for Digital, Data and Technology Digital professionals in health and social care and argues that long term this ‘would, bring cohesiveness between the disparate professions, to set and assure adherence to professional standards, and harmonise the DDaT profession’. The BMA (2020:10) note that with the social care workforce it is ‘crucial that there is investment in training and the continuing professional development of social care staff as a step to professionalising the workforce’. While the evidence around new types of knowledge, new skills and roles, and new ethical codes of conduct emerging for KIND (Public Health Scotland, 2020) professionals arguably may make it timely for the workforce development plan to consider approaches that will support a new and broader definition of KIND professionalism.

4.6 Training and development

Providing training and development are both cited in the literature as important for attracting and recruiting digital workers and developing talent in-house (Bardley, 2016; HEE, 2021a:135, NHSE/I,2021). NHS Providers (2017: 21) found that offering career development and ongoing training are key reasons for staff choosing to apply for a post or alternatively if these are not offered why employees leave their jobs. To assist training and development it is proposed that best practice is followed for training, recruitment, retention, and professional development needs and these be developed at a national level, with the implementation led by local employers who can modify to fit their needs (NHS Providers, 2017:37). The Digital Health and Care Innovation Centre (2021:9) suggest the development of an agreed digital technology and health informatics occupational framework in the health and care sector and that HEE work with Health Data Research UK (HDRUK) to provide under and postgraduate education in universities to deliver a supply of health data analysts and data scientists into the health and care sector. Other training and development opportunities cited in the literature (Morley, 2022) that promote training and education for the digital workforce and can attract a workforce are the: NHS Digital Academy, Digital Health Leadership Programme, Digital Futures Programme and Topol Fellowships in Digital Healthcare and Health Innovation Placements. The BMA (2020:11) propose shared training between NHS and social care staff and suggest this could encourage better communication between the sectors and lead to improvements in patient care. Roberts (2015) contends that to deliver the future changes required for social care it is essential to develop the digital workforce:

This means recruiting more people with strong digital skills across digital and service-delivery teams, but also providing training and support for professional development so that existing staff can fill this gap. This could be provided in collaboration with other, nearby authorities – for instance, by supporting network events such as LocalGovCamp that bring together digital teams from different authorities to learn from each other.

The lack of a clear career structure for the health and social care digital workforce is another recruitment and retention issue identified in the literature, particularly if there are limited opportunities for learning and development (Castle-Clarke and Hutchings, 2019:40). The importance of offering co-ordinated career development for retention of the clinical informatics workforce was

highlighted by Sood (2017: n.p.), Associate Chief Clinical Information Officer (CCIO) at NHS England who noted:

“We don’t have a clear pathway. We have pockets of excellence, but people have built piecemeal careers on their own backs,” ... “We need to invest in our workforce. We also need to raise our standards and become more professional and organised and provide an attractive proposition for those that want to stay in the system.”

Solutions proposed to attract digital recruits and provide a career structure include the adoption of the [Skills Framework for the Information Age \(SFIA\)](#) this is considered the global standard that defines digital and other related skills. Potentially, SFIA provides a unified and consistent internationally recognised approach to training for digital roles, offers clear career pathways and is supported by learning and development opportunities, and accreditation where appropriate (Castle-Clarke and Hutchings, 2019:40). HEE (2021d:3) in their report ‘Professional communities and Networking for Health & Social informatics specialists’ proposed five key recommendations in relation to meeting the needs of health and social care informatics professionals, advancing the retention and development of this vital workforce:

- 1) Establish a national informatics networks support function
- 2) Identify and promote existing networks and communities
- 3) Use networks to support our workforce
- 4) Build stronger relationships
- 5) Develop learning and training opportunities

HEE (2019b: 25-26) in their report ‘Health Informatics Career Pathways Project, Report B’ presented a survey of NHS digital/informatics staff (507 responses) that showed most who were employed within digital/informatics roles had not set out to pursue a career in this area. However, when asked of their desires in relation to their roles the following points were made:

- a) Greater access to and awareness of a defined career pathways framework
- b) Opportunities to explore career options
- c) Structured training linked to career pathways
- d) Funding available to support training and development needs
- e) Acceptance from my organisation that my role is a key enabler of change
- f) Opportunities for professional accreditation and respect from my colleagues
- g) My managers to understand that there is value in networking with my peers
- h) To work across a system
- i) To do more observational work
- j) More incentives to me as a recruiting manager to retain staff such as the opportunity to offer flexible working
- k) To ensure that my role and future career path is fit for the future
- l) For the NHS nationally to do things once where appropriate to avoid duplication and waste of public money.

5.0 Conclusion

This rapid review examines the literature on the recruitment and retention of the health and social care digital workforce. The key findings are:

- The literature examined in this rapid review of the recruitment and retention of the health and social care digital workforce identified there are limited sources, particularly for social care.
- There is little consensus around role titles for the digital workforce, although some studies do provide suggested categories or job families.
- The lack of professional identify for the digital health and social care workforce means they are an 'invisible workforce' and can affect recruitment and retention.
- Key factors identified affecting the recruitment and retention of a health and social care digital workforce are the shortage of digital workers, the necessity to recruit and retain a workforce with the right skills and attitudes, the lack of strategic workforce planning, low pay and limited role recognition and identity.
- The solutions proposed are to undertake robust workforce planning, implement and maintain the good employer model, increase pay and introduce a formal pay structure for social care, promote role identity through professionalising the role and encourage recognition using various professional bodies, offer training and development with a recognised and accredited career structure.

In conclusion, this rapid review has presented some of the problems associated with recruiting and retaining the health and social care digital workforce and the proposed solutions that require a concerted approach that fosters the recruitment and retention measures mentioned.

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