

# Characterising the health and social care segment of the BCS (The Chartered Institute for IT) membership and their continuing professional development needs

Katie MacLure <sup>1</sup>, Andrew MacLure,<sup>2</sup> Sharon Levy <sup>3</sup>, Wendy Dearing<sup>4</sup>

**To cite:** MacLure K, MacLure A, Levy S, *et al*. Characterising the health and social care segment of the BCS (The Chartered Institute for IT) membership and their continuing professional development needs. *BMJ Health Care Inform* 2022;**29**:e100504. doi:10.1136/bmjhci-2021-100504

Received 26 October 2021  
Accepted 20 January 2022



© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

<sup>1</sup>Independent Research Consultant, Aberdeen, UK

<sup>2</sup>Independent Research Associate, Aberdeen, UK

<sup>3</sup>Usher Institute, University of Edinburgh, Edinburgh, UK

<sup>4</sup>Institute of Management and Health, University of Wales Trinity Saint David, Lampeter, UK

## Correspondence to

Dr Katie MacLure;  
katiemaclure@outlook.com

## ABSTRACT

**Objectives** The aim of this study was to identify and characterise the health and social care membership of the British Computer Society (BCS), an international informatics professional organisation, and to determine their ongoing development needs.

**Methods** A prepiloted online survey included items on professional regulatory body, job role, work sector, qualifications, career stage, BCS membership (type, specialist group/branch activity (committees, event attendance)), use of BCS.org career planning/continuing professional development (CPD) tools, self-reported digital literacy and other professional registrations. The quantitative data were analysed using descriptive statistics in JASP V.0.9.2 to report frequencies and correlations.

**Results** Responses were received from 152 participants. Most were male (n=103; 68%), aged 50–59 years (n=41; 28%), working in England (n=107; 71%) with master's or honours degrees (n=80; 53%). Most were either new (5 years or less; n=61; 40%) or long-term members (21 years or more; n=43; 28%) of BCS. Most were not interested in health specialist groups (n=57; 38%) preferring non-health specialist groups such as information management (n=54; 37%) and project management (n=52; 34%).

**Discussion** This is the first paper to characterise the health and social care membership of an IT-focused professional body and to start to determine their CPD needs. There are further challenges ahead in curating the content and delivery.

**Conclusion** This study is the starting point from which members' CPD needs, and ongoing interest, in being recognised as health and social care professional members, can be acknowledged and explored. Further research is planned with the participants who volunteered to be part of designing future CPD content and delivery.

## INTRODUCTION

The British Computer Society (BCS), The Chartered Institute for IT, has a long and distinguished history since it was established in 1957 with a membership over 60 000 across 150 countries.<sup>1</sup> The royal charter made the

## Summary

### What is already known?

- ▶ British Computer Society (BCS), The Chartered Institute for IT, does not interrogate membership data to determine which of its members identify as health and social care professionals.
- ▶ Therefore, BCS cannot fulfil its responsibility to identify members' relevant continuing professional development (CPD) needs and offers the right opportunities to support their career aspirations.

### What does this paper add?

- ▶ This study has identified and characterised the BCS membership segment who self-identified as health and social care professionals and articulated their CPD needs, and ongoing interest, in being recognised as specialists.
- ▶ Further research is planned with the participants who volunteered to be part of ongoing research designing future CPD content and modes of delivery.

BCS a charity 'responsible for raising the standards of IT education, professionalism, ethics and practice' while 'making IT good for society'. Built on five pillars of: (1) sharing expertise, (2) improving education, (3) influencing practice, (4) driving standards and (5) supporting careers, its membership is now drawn from professions as diverse as the technologies which underpin society including health and social care.<sup>2</sup>

During the COVID-19 pandemic, BCS ran a campaign to celebrate IT professionals as 'val workers' keeping society connected and informed.<sup>3</sup> Efforts to manage COVID-19 outbreaks relied on advanced coordinated technologies; the health data scientists and bioinformaticians used digital analytics tools; ordinary citizens relied on digital tools and connectivity for work and education and the health and social care professionals



transformed their practice while honing their digital literacy to continue and offer optimal (digital) healthcare services.<sup>4</sup>

The Topol Review, published in 2019, focused on 'preparing the healthcare workforce to deliver the digital future'.<sup>5</sup> Building a digitally ready workforce (BDRW) has been an ongoing strategy for the National Health Services (NHS) across the devolved home nations of the UK (England, Northern Ireland, Scotland and Wales) and increasingly considered for social and care workers too. The review proposed three principles: (1) that patients should be partners in decisions about their health aided by health technologies; (2) that the healthcare workforce needs expertise and guidance to evaluate new technologies and (3) that adoption of new technologies should give health and care professionals 'the gift of time to care'.<sup>5</sup> Three technologies were specifically mentioned: (1) artificial intelligence (AI); (2) genomics and (3) digital medicine. The review emphasised the importance of a digitally competent health and social care workforce which understands data-driven technologies and is 'digitally confident, digitally aware and digitally literate'. It described new disciplines that were likely to emerge such as higher specialist scientists, knowledge management, AI and robotics engineering, digital health technicians, bioinformaticians and digital technologists.<sup>5</sup>

In anticipation of, and catering for, the learning needs of an emerging workforce, the BCS planned an internal audit to articulate the provision and needs of current members who work in the health and social care arena. The main objective was to identify appropriate learning scaffolding frameworks and provision of 'in house' continuing professional development (CPD) content, which fit the lifelong learning ethos. However, it became clear at an early stage that the organisation does not have, nor is it set to retrospectively collect, data on professional roles or sectors of its membership. It is, therefore, unaware which of their members identify as health and social care professionals. These data are critical in understanding professional learning needs and how to address them.

A 2020 scoping review of 1.5 million registrants identified 32 healthcare professional job titles in the UK.<sup>6</sup> Each associated with one of the nine regulatory bodies each of which has a different length of CPD cycle (General Optical Council refers to continuing education and training (CET) rather than CPD) ranging from 1 year to 5 years.<sup>6</sup>

An earlier 2019 report, prepared by 'The Interprofessional CPD and Lifelong Learning UK Working Group', identified five principles for CPD and lifelong learning for the health and social care sector.<sup>7</sup> Principle 1 stated that it would be each person's responsibility and be made possible and supported by their employer; principle 2 stated that it would benefit service users; principle 3 stated that it would improve the quality of service delivery; principle 4 stated that it would be balanced and relevant and finally, principle 5 stated that it would be

recorded and show the effect on each person's area of practice. However, little is included regarding digital (n=0) or informatics (n=0) or technology (n=2) but it calls on professional bodies and trade unions, employers and 'the wider system' to promote CPD to improve the quality of service delivery.<sup>7</sup>

In contrast, a most recent commissioned report published in *The Lancet* considered the future of health and care service post-COVID-19, although 64 pages in length, featured many of these key terms numerous times: digital (n=74), informatics (n=0), technology (n=86) and health (n=1539), social (n=251) and care (n=954).<sup>8</sup> The report names: Health Education England and the Department of Health and Care; National Health Service Education for Scotland; Health Education and Improvement Wales and Northern Ireland Department of Health responsible for health workforce planning.<sup>8</sup>

There are key skills and competencies frameworks for health and care<sup>9-15</sup> which have started to include variations on technical efficiency, informatics competence or similar. It may still take a leap of faith to compare, combine or critically appraise such frameworks against the BCS SFIAplus V.7, a task which is outwith the scope of this study.<sup>16 17</sup> The Skills Framework for the Information Age (SFIA) which, being generic, may lack alignment given health (n=0), social (n=0) and care (n=0) do not feature in SFIAplus.<sup>16 17</sup>

Given reports that the health and social care professions account for almost 1 in 10 jobs in the UK<sup>18</sup> and in the aftermath of COVID-19 the rapid digitisation of the sector, the BCS, The Chartered Institute for IT, needs to act now. BCS has a responsibility to identify and engage those working with digital health or ehealth or technology enabled care or with health informatics interests and recognise the potential for hybrid career paths which may have specialised CPD needs.<sup>19</sup>

### Aim of study

Therefore, the aim of this study was to characterise the health and social care membership of BCS and to determine their CPD needs.

## METHODS

### Design and methods

A quantitative cross-sectional online survey was designed based on a literature review and interviews with key stakeholders (36 representatives of health and social care professions, BCS members, BCS staff).

### Setting

The BCS, The Chartered Institute for IT, is the UK's professional body for computing including health and care informatics. The membership represents a broad spectrum of IT professionals but does not currently collect data on employment sector so cannot target relevant communications.

### Inclusion and exclusion criteria

The survey was open to all BCS members who self-identified as health or social care professionals.

### Data collection tools

The survey was reviewed for face and content validity within the research team before piloting with five key stakeholders who had previously taken part in a related interview. The survey was hosted online by BCS and shared with the whole membership by email inviting participation by anyone self-identifying as a health or social care professional. Two reminders were sent. The link to the survey was also promoted in newsletters, on social media and with BCS specialist groups.

Questions asked were related to: professional regulatory body, job role or title, work sector, highest qualification, career stage, BCS membership (type, years since enrolled, specialist group interests and branch activity (committees, event attendance)) and use of BCS.org career planning and CPD tools, self-reported digital literacy and other professional registrations. An open text question, which is reported elsewhere, asked what CPD content the sector wanted BCS to provide. The survey was anonymous but participants had the opportunity to opt in to further involvement including: to be recognised by BCS as a health and social care professional, take part in a follow-up interview and join a consensus panel to design/decide on BCS CPD provision for the health and social care membership.

### Data collection

The survey was open from 13 January to 16 March 2021. Completion of the survey was taken as informed consent.

### Data analysis

Only the quantitative data from the survey are reported in this article. These were analysed using descriptive statistics in JASP V.0.9.2, the open source statistical programme, to report frequencies and correlations.

## RESULTS

Responses were received from 152 participants which is a tiny proportion of the 60 000 international membership. As per [table 1](#), most were male (n=103; 68%) with the highest proportion in the 50–59 years age bracket (n=41; 28%) and working in England (n=107; 71%). This educated workforce reported their highest qualification gained as foundation degree level (n=37; 24%), master's or honours degree level (n=80; 53%) or doctoral level (n=19; 13%). Many were also members or registered with one or more professionally recognised organisations including BCS Federation of Informatics Professionals (FED-IP; n=23; 16%) or the Institute of Engineering/Chartered Engineer (n=18; 12%) or Registered IT Technician (n=16; 11%). However, more than half (n=81; 55%) were not. The majority considered themselves to be mid-career (n=64; 42%) with few early in their career

**Table 1** Demographics and BCS membership (N=152)

Do you identify as?	n (%)
Male	103 (68)
Female	45 (30)
Prefer not to say	3 (2)
Which age group are you in?	
Under 20 years	0 (0)
20–29 years	8 (5)
30–39 years	22 (15)
40–49 years	28 (19)
50–59 years	41 (28)
60–69 years	29 (20)
70 years or over	20 (14)
Which country do you mainly work in?	
England	107 (71)
Wales	23 (15)
Scotland	9 (6)
Northern Ireland	3 (2)
Other: UK (n=3), Hong Kong (n=2), Luxembourg, Sri Lanka, Singapore, international bodies	9 (6)
Which level is your highest qualification?	
Doctorate	19 (13)
Master's or honours degree/postgraduate certificate/diploma/NVQ5/SVQ5	80 (53)
HNC/D or foundation/ordinary/bachelor's degree/NVQ4/SVQ4	37 (24)
Scottish highers/advanced highers/A levels/National 5/NVQ3/SVQ3	7 (5)
GCSE/standard grade/National 4/NVQ2/SVQ2 or equivalent	6 (4)
Other: BA (Hons) plus FCCA, M.B.B.S., CISSP	3 (2)
Are you a member or registered with any of the following?	
FED-IP	23 (16)
IEng/CEng	18 (12)
RITTech	16 (11)
FCI	12 (8)
CHIME	11 (8)
HIMSS	7 (5)
Other: InstRE, FCyBS, European Resuscitation Council, IAHSI, Chartered Management Institute, IEEE, BCS Elite IT Leaders Forum, IHM, IMIA, Institute of Leadership and Management, Institution of Civil Engineers, IAP	15 (10)
None of the above	81 (55)
In terms of your career, do you consider yourself to be?	
Early career/newly qualified/new entrant	20 (14)
Mid-career	64 (42)
Looking towards retirement	36 (24)

Continued

**Table 1** Continued

Retired	32 (21)
Which level of BCS membership do you have?	
Professional (MBCS)	67 (44)
Chartered IT professional (MBCS CITP)	23 (15)
Associate (AMBCS)	22 (15)
Chartered fellow (FBCS CITP)	13 (9)
Fellow (FBCS)	10 (7)
Student	9 (6)
Affiliate	8 (5)
Is that through?	
Individual membership	113 (75)
Organisational membership	37 (25)
How long have you been a BCS member?	
5 years or less	61 (40)
6–10 years	17 (11)
11–15 years	17 (11)
16–20 years	14 (9)
21 years or more	43 (28)

BCS, British Computer Society; FED-IP, Federation of Informatics Professionals; IEng/CEng, Institute of Engineering/Chartered Engineer; RITech, Registered IT Technician.

(n=20; 14%). The survey attracted participation from a sizeable group of retired IT professionals (n=32; 21%) and those looking towards retirement (n=36; 24%). Most were professional members of the BCS (MBCS; n=67; 44%) or chartered IT professionals (n=23; 15%); very few were student members of BCS (n=9; 6%). A quarter of the respondents' BCS membership was through their employment organisation (n=37; 25%) with the majority holding individual membership (n=113; 75%). The number of years of membership was dominated by new (5 years or less; n=61; 40%) or long-term membership (21 years or more; n=43; 28%).

In [table 2](#), there was representation from the Nursing and Midwifery Council (n=13; 9%), Health and Care Professions Council (n=8; 5%), the General Medical Council (n=6; 4%) with few responses from the General Dental Council, General Pharmaceutical Council or Social Work England (each n=2; 1%) and Social Care Wales (n=1; 1%) is shown. There was no participation from the General Chiropractic Council, General Optical Council, General Osteopathic Council, Northern Ireland Social Care Council, Pharmaceutical Society of Northern Ireland, Scottish Social Services Council or Scottish Care. A large proportion was not associated with any health and social care regulatory body (n=91; 61%).

Respondents worked in multiple sectors which, for most, were NHS based (n=110; 73%) or corporate IT (n=33; 22%). Although low in numbers, the breadth of sectors was demonstrated with residential and day care for older people (n=5; 3%), adults (n=3; 2%) and children

**Table 2** Regulatory bodies and employment sectors (N=152)

Regulatory body	n (%)
Nursing and Midwifery Council	13 (9)
Health and Care Professions Council	8 (5)
General Medical Council	6 (4)
General Dental Council	2 (1)
General Pharmaceutical Council	2 (1)
Social Work England	2 (1)
Social Care Wales	1 (1)
General Chiropractic Council	0 (0)
General Optical Council	0 (0)
General Osteopathic Council	0 (0)
Northern Ireland Social Care Council	0 (0)
Pharmaceutical Society of Northern Ireland	0 (0)
Scottish Social Services Council	0 (0)
Scottish Care	0 (0)
None of the above	91 (60)
Other: FEDIP/UKCHIP (n=4), UK Council for Psychotherapy (n=2), IAHSI (n=2), BACP (n=2), ISC (n=2), NWIS (n=2), Society and College of Radiographers, NCS, Public Health, CPCAB, Care Quality Commission, Association of Clinical Biochemists, Institute of Biomedical Science, IHM, European Resuscitation Council, EFMI, IMIA, BCS, NHS Trust, ACCA, ISACA, IAPP, SABSA Institute	28 (18)
Which sectors do you or did you work in?	
NHS	110 (72)
Corporate IT	33 (22)
Academia/education	24 (16)
Research/consultancy	23 (15)
Primary care	23 (15)
Secondary care	22 (15)
Local government	20 (13)
Voluntary sector	20 (13)
Freelance/independent	18 (12)
Industry	15 (10)
Third sector	14 (9)
National government	12 (8)
Intermediate care	10 (7)
Emergency care	9 (6)
Social work	9 (6)
Performance	8 (5)
Other community-based support services	8 (5)
Residential care (adults)	6 (4)
Care at home	6 (4)
Residential care (older people)	5 (3)
Residential care (children)	3 (2)

Continued

**Table 2** Continued

Day care services (adults)	3 (2)
Housing support	2 (1)
Day care services (children)	2 (1)
Day care services (older people)	1 (1)
Other: ExE for CQC—adult social care, civil service—defence primary healthcare, social care system software supplier, project management and business analysis, mental healthcare, social care membership body, consultancy, government departments, NIHR and HDRUK	13 (9)

NHS, National Health Services.

(n=3; 2%) as well as housing support (n=2; 1%) and care at home (n=6; 4%).

Survey respondents were associated with a range of BCS specialist groups and branch committees (table 3). While primary care was the most frequently indicated (n=44; 29%), a larger proportion was not interested in any of these specialist groups (n=57; 38%). A similar proportion was interested in non-health specialist groups such as information management (n=54; 37%) and project management (n=52; 34%). Overall, although participants self-identified as health and social care professionals, many indicated more interest in non-health specialist groups.

In relation to branch committee membership, more than a third were unaware of the opportunity (n=52; 34%) with just over a fifth either a current (n=21; 14%) or past (n=11; 7%) branch committee member.

Table 4 gauges the digital literacy of the participants which in most topic areas is ‘confident and capable’ with the exception of ‘creation, innovation and research’ which dips to ‘can use’ (n=52; 36%) and awareness ‘know’ (n=26; 18%). There is still a sizeable proportion who describe themselves as an ‘expert user’ particularly noticeable for the topic area ‘information, data and content’ (n=35; 23%) and ‘technical proficiency’ (n=29; 19%).

When asked which recent BCS Health and Care webinar titles most appealed (table 5), participants found ‘data enabled technologies and services in health and social care’ most appealing (n=57; 38%). This was the case for both retired and looking towards retirement (n=24/68; 35.3%) and other earlier career stages (n=33/84; 39.3%). Second most popular was ‘building a digitally ready workforce in health and social care’ (n=46; 34%). While the appeal of ‘ethics and AI’ and ‘co-creating digital medicine technologies’ were unclear, participants found ‘a framework for genomic leadership’ least appealing (n=74; 63%). Again, this ‘least appealing’ topic was the case for retired and looking towards retirement (31/68; 45.6%) and earlier career stages (43/84; 51.2%).

**Table 3** Interest in health and other BCS specialist groups and branch committees (N=152)

Which of these existing health and other BCS specialist groups are you interested in or signed up to follow?	n (%)
Primary Care	44 (29)
National Mental Health	25 (16)
Health Nursing	22 (14)
Health & Care Wales	17 (11)
Health & Care Northern	15 (10)
Health & Care Scotland	10 (7)
None of the above	57 (38)
Other: BCS Women (n=2), AI (n=2), Health Informatics, Primary Care, Health Nursing, Health London & South East, Health London, GP Specialist Group, Health Informatics, Social Care, Allied Health Professions, Acute, Genomics, Clinical Best Practise, Telemedicine, SGAI, District Nursing and community care, London Medical	12 (8)
Are there any other existing BCS specialist group areas you are interested in or signed up to follow?	
Information Management	54 (36)
Project Management	52 (34)
Learning & Development	39 (26)
Ethics, Law & Diversity in IT	35 (23)
Business & Consultancy	33 (22)
Strategy & Architecture	32 (21)
Future of Computing	30 (20)
Security	29 (19)
Software Development	28 (18)
History of Computing	17 (11)
None of the above	14 (9)
Other: BCS Women, AI, Software Testing, Data Scientist, IRMA, Elite IT, Digital Informatics and Data Analytics (BI, AI and Machine Learning), North London, Data Management, Central London, SGAI, Artificial Intelligence	14 (9)
Are you or have you ever been a member of your local branch committee?	
No—not interested	67 (44)
No—wasn’t aware of opportunity	52 (34)
Yes—currently	21 (14)
Yes—in the past	11 (7)

BCS, British Computer Society.

## DISCUSSION

This is the first paper to characterise the health and social care membership of BCS and to start to determine the CPD needs of this diverse population. From the results, participants form a ‘digitally confident, digitally aware and digitally literate’<sup>5</sup> group meeting the target competencies identified in the Topol Review,<sup>5</sup> Karas *et al*’s review,<sup>6</sup> Broughton *et al*’s report<sup>7</sup> and the competencies frameworks from across the health and social care professions and the home nations.<sup>9–15</sup> It is clear that the trajectory is towards BDRW which may have gained momentum

**Table 4** What is your level of digital literacy in relation to the topic areas listed below?

Digital literacy topic area	I know there are many related digital tools and technologies	I can use related digital tools and technologies	I am confident and capable in the use of a wide range of related digital tools and technologies	I am an expert user and take a lead in modelling and promoting the use of a wide range of related specialist digital tools and technologies
Information, data and content (n=151)	11 (7)	29 (19)	<b>76 (50)</b>	35 (23)
Teaching, learning and self-development (n=149)	13 (9)	42 (28)	<b>74 (50)</b>	20 (13)
Communication, collaboration and participation (n=150)	11 (7)	40 (27)	<b>78 (52)</b>	21 (14)
Creation, innovation and research (n=144)	26 (18)	<b>52 (36)</b>	47 (33)	19 (13)
Technical proficiency (n=149)	19 (13)	42 (28)	<b>59 (40)</b>	29 (19)
Digital identity, well-being, safety and security (n=149)	20 (13)	42 (28)	<b>65 (44)</b>	22 (15)

Most frequent highlighted in bold

during the COVID-19 pandemic.<sup>8 20–23</sup> Whether that momentum of improving digital competency can be continued post COVID-19, with a workforce which has been overwhelmed during the pandemic, remains to be seen. It should be also be noted that the three technologies highlighted in the Topol Review as important for the future of health and social care, namely AI, genomics and digital medicine, were the least popular webinar topics for this group of respondents.<sup>5</sup>

BCS do not collect data on professional roles or sectors. They do not know which of their members identify as health and social care professionals, so consideration needs to be given to inviting the membership to share details which can be the foundation for targeting relevant CPD opportunities. Not only would that provide insight into the 37 listed professions<sup>6,7</sup> but also into the relevant regulatory and professional bodies so BCS can complement rather than replicate their CPD offering.

**Table 5** Which of these example webinar event titles most appeals to you?

Webinar titles	Mean	1—most appealing	2	3	4	5—least appealing
Data Enabled Technologies and Services in Health and Social Care (n=138)	1.96	<b>57 (38)</b>	41 (27)	31 (20)	7 (5)	2 (1)
Building a Digitally Ready Workforce in Health and Social Care (n=134)	2.25	<b>46 (34)</b>	37 (28)	29 (22)	16 (12)	5 (4)
Ethics of Artificial Intelligence and Autonomous systems in Health and Social Care (n=135)	2.88	29 (21)	28 (21)	28 (21)	30 (22)	20 (15)
Co-creating Digital Medicine Technologies with Health and Social Care Staff (n=127)	2.96	20 (16)	25 (20)	34 (27)	36 (28)	12 (9)
A Framework for Genomic Leadership across Care Sectors (n=118)	4.37	4 (3)	6 (5)	6 (5)	28 (24)	<b>74 (63)</b>

Where clear, most frequent highlighted in bold

The recent *Lancet* paper<sup>8</sup> names: Health Education England and Department of Health and Care; National Health Service Education for Scotland; Health Education and Improvement Wales and Northern Ireland Department of Health as responsible for health workforce planning. This highlights further opportunities for meaningful collaboration to grow the range of CPD on offer. Globally, the challenge has been highlighted by the Organisation for Economic Co-operation and Development (OECD) in their 2021 report into 'Empowering the Health Workforce'.<sup>16</sup> The OECD states that, 'To meet the current demand for digital upskilling, the CPD and other professional training schemes should become a shared responsibility between employers, professional organisations, and ministries of health'.<sup>16</sup>

It may still take a leap of faith to compare, combine or critically appraise the many frameworks<sup>9-15</sup> against the BCS SFIaplus V.7<sup>17 18</sup> but this task is outwith the scope of this study. There are many other players in the CPD arena, such as the NHS Digital Academy<sup>24 25</sup> and, for this mainly highly educated group of professionals, wider options provided by over 80 MSc courses in health data sciences, analytics and informatics.<sup>20</sup> Certainly, OECD notes that 'the pace of changes has been particularly slow with regard to whether and how the CPD and other on the job training include digital health content'.<sup>16</sup>

But, the obstacle is that BCS currently do not know how to meaningfully identify and support their health and social care professional membership with their CPD, CET or lifelong learning needs. It was interesting to note and useful for people organising events and content that participants from all career stages showed commonality in the webinar topics which most and least appealed to them. It is also unclear from the results whether the health and social care professional really understands who and what the BCS is, the purpose of BCS, how BCS can support the breadth of health and social care professionals and what it can offer. If BCS is to support the hybrid careers of health and social care professionals by providing relevant CPD, it must first identify the segment of the membership.

With the BCS FED-IP reporting six themes in their 'Becoming the Profession'<sup>26</sup> as: (1) Recognition; (2) CPD; (3) Accreditation, Education and Training, (4) Career Guidance and Support, (5) Networking and (6) Simplifying the Landscape, there is clear alignment with the results of this report plus interest and willingness to explore this complexity.<sup>27</sup> However, there is a lot more to be done in engaging meaningfully with the health and social care professionals and their communities of practice, to optimise across the relevant organisations the CPD offering to each is best situated to provide.

### Limitations

The participants self-identified as health and social care professionals but many were not registered with a regulatory body. Moreover, the characteristics of the sample are very different to the population of mainly female staff

working in health and social care settings. This raises questions around shared understanding of whom among the membership fit the BCS target group. This lack of a denominator also makes it impossible to calculate a response rate but clearly higher participation would be helpful in achieving generalisability. If BCS were to give the applicant the opportunity to share their professional and role details on registration or during an annual review, the role BCS could fulfil with regard to CPD would be much simpler to follow-up and action. A strength of the study is the adoption of the Consensus-Based Checklist for Reporting of Survey Studies.<sup>28</sup>

### CONCLUSION

In conclusion, BCS has a responsibility to provide its members with the CPD content that is relevant to their career path and aspirations. To date, BCS has not been able to target the health and social care segment of the membership. This study has identified and characterised that segment of professionals who self-identified, and have indicated, their CPD needs and ongoing interest in being recognised by BCS as health and social care professionals with BCS membership. Further research is planned with the participants who volunteered to be part of ongoing research for designing future CPD content and delivery.

**Twitter** Katie MacLure @katiemaclure

**Acknowledgements** The authors gratefully acknowledge those who initiated the design of the research, helped to pilot the study and took part in the face and content validity and staff at British Computer Society headquarters who hosted and distributed the survey. Most of all the authors thank those who took the time to participate in the study.

**Contributors** SL and WD: conceived and gained funding, kept oversight of the project, commented on design of data collection and analysis and critically revised versions of the paper. KM and AM: designed and conducted data collection and analysis and wrote the initial draft of the paper, which was revised by KM. All authors approved the final version for which KM acts as guarantor for the conduct and publication of its' content.

**Funding** This research was funded by the BCS Health and Care Executive.

**Competing interests** KM, SL and WD are members of the British Computer Society Health and Care Executive. Otherwise, they have no conflicts of interest to declare.

**Patient consent for publication** Not applicable.

**Ethics approval** This study involved human participants but ethical approval was not explicitly sought as it is included in the legal and privacy notices for British Computer Society (BCS) members (<https://www.bcs.org/legal-and-privacy-notices/>). The BCS Data Privacy Notice on 'how we use your personal data' includes provision of 'surveys, information about authors' awards and events, offers and promotions, related to the products and/or services'. The survey was reviewed by BCS community team and BCS Health and Care Executive. Voluntary completion of the survey was taken as participant informed consent. Participants gave informed consent to participate in the study before taking part. In addition, the study was deemed retrospectively, to be a service evaluation exempt from Research Ethics Committee review.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** Data are available upon reasonable request.

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is

properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

#### ORCID iDs

Katie MacLure <http://orcid.org/0000-0003-0686-948X>

Sharon Levy <http://orcid.org/0000-0001-6208-6928>

#### REFERENCES

- BCS. BCS website – about us, 2021. Available: <https://www.bcs.org/more/about-us/> [Accessed 16 Aug 2021].
- BCS. BCS homepage - The professional body for computing, 2021. Available: <https://www.bcs.org/> [Accessed 16 Aug 2021].
- Hamilton J. Recognising vITal workers. *ITNOW* 2020;62.
- Fagherazzi G, Goetzing C, Rashid MA, et al. Digital health strategies to fight COVID-19 worldwide: challenges, recommendations, and a call for papers. *J Med Internet Res* 2020;22:e19284.
- Topol E. The Topol review. preparing the healthcare workforce to deliver the digital future, 1-48, 2019. Available: <https://topol.hee.nhs.uk/wp-content/uploads/2019/02/Topol-Review-FAQs.pdf> [Accessed 15 Aug 2021].
- Karas M, Sheen NJL, North RV, et al. Continuing professional development requirements for UK health professionals: a scoping review. *BMJ Open* 2020;10:e032781.
- Broughton W, Harris G, on behalf of the Interprofessional CPD and Lifelong Learning UK Working Group. *Principles for continuing professional development and lifelong learning in health and social care. Bridgwater: College of Paramedics*, 2019. <https://www.collegeofparamedics.co.uk/publications/principles-for-cpd>
- Anderson M, Pitchforth E, Asaria M, et al. LSE–Lancet Commission on the future of the NHS: re-laying the foundations for an equitable and efficient health and care service after COVID-19. *The Lancet* 2021;397:1915–78.
- NHS England. A health and care digital capabilities framework, 2018. Available: <https://www.hee.nhs.uk/sites/default/files/documents/Digital%20Literacy%20Capability%20Framework%202018.pdf> [Accessed 15 Aug 2021].
- Agenda for Change Project Team. The NHS knowledge and skills framework (NHS KSF) and the development review process. Department of health, 2004. Available: [https://webarchive.nationalarchives.gov.uk/ukgwa/20130107105354/http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4090861.pdf](https://webarchive.nationalarchives.gov.uk/ukgwa/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4090861.pdf) [Accessed 17 Aug 2021].
- NHS Scotland (2021) key skills framework. Available: <http://www.ksf.scot.nhs.uk/> [Accessed 17 August 2021].
- NHS Wales (2004) key skills framework. Available: <http://www.wales.nhs.uk/sites3/Documents/433/KSF04088218.pdf> [Accessed 17 Aug 2021].
- Brice S, Almond H. Health professional digital capabilities frameworks: a scoping review. *J Multidiscip Healthc* 2020;13:1375–90.
- NHS England. A digital framework for allied health professionals, 2019. Available: <https://www.england.nhs.uk/wp-content/uploads/2019/04/a-digital-framework-for-allied-health-professionals.pdf> [Accessed 18 Aug 2021].
- Li S, Bamidis PD, Konstantinidis ST, et al. Setting priorities for EU healthcare workforce IT skills competence improvement. *Health Informatics J* 2019;25:174–85.
- Socha-Dietrich K. Empowering the health workforce to make the most of the digital revolution, 2021. Available: <https://www.oecd.org/health/health-systems/Empowering-Health-Workforce-Digital-Revolution.pdf> [Accessed 15 Nov 2021].
- BCS. Browse SFIaplus, 2020. Available: <https://mybcs.bcs.org/career-development/browse-sfiaplus/> [Accessed 16 Aug 2021].
- BCS. Skills framework for an information age (SFIaplus v7), 2020. Available: <https://sfiaplus.bcs.org/SfiaPlus> [Accessed 16 Aug 2021].
- The King's Fund. Overview of the health and social care workforce. Available: [https://www.kingsfund.org.uk/projects/time-think-differently/trends-workforce-overview?utm\\_source=twitter&utm\\_medium=social&utm\\_term=socialshare](https://www.kingsfund.org.uk/projects/time-think-differently/trends-workforce-overview?utm_source=twitter&utm_medium=social&utm_term=socialshare) [Accessed 29 Sep 2021].
- Prospects (2021) UK masters courses in informatics. Available: <https://www.prospects.ac.uk/postgraduate-courses/masters-degrees?keyword=informatics&featuredCourses=138851%2C125812&page=0> [Accessed 18 Aug 2021].
- He W, Zhang ZJ, Li W. Information technology solutions, challenges, and suggestions for tackling the COVID-19 pandemic. *Int J Inf Manage* 2021;57:102287.
- Vargo D, Zhu L, Benwell B, et al. Digital technology use during COVID -19 pandemic: A rapid review. *Hum Behav Emerg Technol* 2021;3:13–24.
- Bokolo AJ. Application of telemedicine and eHealth technology for clinical services in response to COVID-19 pandemic. *Health Technol* 2021;11:359–66.
- Higher Education England (2021) Digital Health Academy. Available: <https://www.hee.nhs.uk/our-work/nhs-digital-academy> [Accessed 18 Aug 2021].
- The Knowledge Network (2021) NMAHP digital health and care leadership programme. Available: <http://www.knowledge.scot.nhs.uk/enmahpleadershipcommunity/resources.aspx> [Accessed 18 Aug 2021].
- Federation of Informatics Professionals. Becoming the profession, 2021. Available: <https://www.fedip.org/becoming-the-profession> [Accessed 17 Aug 2021].
- Mbunge E, Akinnuwesi B, Fashoto SG, et al. A critical review of emerging technologies for tackling COVID -19 pandemic. *Hum Behav Emerg Technol* 2021;3:25–39.
- Sharma A, Minh Duc NT, Luu Lam Thang T, et al. A consensus-based checklist for reporting of survey studies (cross). *J Gen Intern Med* 2021;36:3179–87.