Initial impact of the COVID-19 pandemic on public health training: participatory action research to understand experiences in the East Midlands

E. L. Maile[1,2,†], S. M. Horsley[1,3,†], T. Dunn[1,2,3,†], J. M. Knight[1,2,†]

[1]Public Health England Midlands and East Region, Nottingham NG2 4LA, UK
[2]Division of Epidemiology and Public Health, University of Nottingham, Nottingham NG7 2RD, UK
[3]Derby City Council, Council House, Corporation St, Derby DE1 2FS, UK
Address correspondence to E. L. Maile, E-mail: emily.maile@nhs.net
[†]Joint first authors

ABSTRACT

Background Specialty public health training consists of 48 months of practice across the domains of health protection, healthcare public health and health improvement. With the onset of the COVID-19 pandemic, activity pivoted towards pandemic management and the response became a significant element of registrar practice. This research aimed to understand the impact of this shift in focus on registrars' role and training.

Methods Participatory action research comprising (i) a reflective survey sent to all specialty registrars in the East Midlands training region and (ii) Delphi rounds with survey respondents to generate consensus and define themes.

Results Sixteen (44%) registrars completed the survey with 12 (75%) participating in the Delphi rounds. The early pandemic response stages both challenged and re-affirmed registrars' role and identity in public health and training while providing unique and diverse learning and development. Underpinning these themes is a variability in experience depending on prior experience, placement and training stage.

Conclusions The pandemic impacted the practice, training and home-life of registrars who were required to negotiate significant challenge and uncertainty. This original work adds to a growing body of correspondence and opinion pieces articulating the experiences and challenges of medical and public health education during a pandemic.

Keywords Public health, health protection, education, employment and skills

Background

Specialty public health registrars in the UK have diverse professional backgrounds including clinical practice, health data analytics and public health management. Specialty training consists of 48 months 'practising' public health across a range of domains and sub-specialisms including health protection, healthcare and health improvement. The emphasis is on high 'quality training' experiences and 'professional development' to develop the required breadth of knowledge and skills to become a consultant in public health.[1]

With the onset of the COVID-19 pandemic, public health pivoted to focus towards pandemic management, and the health protection response became a significant element of registrar practice.

The Faculty of Public Health, who oversee the quality of UK public health training, report that 'the pandemic has seen registrars take on an incredibly important role in safeguarding the public, whilst also balancing the needs of the training scheme'.[2] However, there is a gap in our empirical understanding of the experiences of public health registrars during the COVID-19 pandemic.

This research aimed to understand and document the experiences of the current cohort in the East Midlands, during the first three months of the COVID-19 pandemic response to assess how this period affected the breadth and quality of training. The intent is to generate insight to inform future deployment of this public health workforce in the pandemic response.

E. L. Maile, Specialty Registrar in Public Health

S. M. Horsley, Consultant in Public Health

T. Dunn, Specialty Registrar in Public Health and Honorary Assistant Professor in Public Health

J. M. Knight, Consultant in Public Health and Honorary Assistant Professor in Public Health

Methods

Sample

There are 36 registrars currently training in the East Midlands. Around half are medically qualified and the remainder from allied health professionals and public health practice. Most are in placements in local authorities with others placed in academia, Public Health England (PHE) and NHS acute trust settings. Around half are in the first two years of training.

Survey

The research covers the first three months of the pandemic response broadly defined as March–May 2020. This period covers both aspects of the 'Contain' and 'Delay' phases of the UK strategic approach.[3]

Collaborative person-centred methods and reflective practice is an important learning and development skill for public health registrars[4] and is therefore a key element of the methodology used.[5,6] A bespoke questionnaire, informed by a reflective framework (Gibbs[7]), was developed by SH and piloted by TD, JK and EM. There was a focus on reflexive topics including description of the tasks and roles, feelings, situational analysis and forward thinking. This was piloted within the author group and consensus was reached regarding the format and scope of questions.

The questionnaire was distributed via Google forms to the registrar cohort on two occasions; 7th May 2020 and 20th May 2020. Data sharing, anonymity and mental health support were detailed in the offer and participation was voluntary.

Respondents were asked to contact the authors directly to join the Delphi group.

Initial thematic analysis was undertaken by the authors; each coding a quarter of the responses using Braun and Clarke's methods.[8] This analysis then informed the work of the Delphi groups.

Three Delphi rounds were undertaken to reach consensus and create themes (Fig. 1).

The rounds were conducted using Microsoft Teams due to the requirement to work from home. Round 1 participants reviewed the codes prior to the Delphi session and created 20 themes. In the session, they condensed these to 10, which they then ranked in order of significance. Round 2 participants discussed, collated and condensed these 10 proto themes into four meta themes. Round 3 participants (the authors) created the final themes from the meta themes and added granularity and detail from the initial 81 codes.

The final themes were shared with the full registrar cohort ($n = 36$) for participant verification; no challenge was received, and no objections were raised.
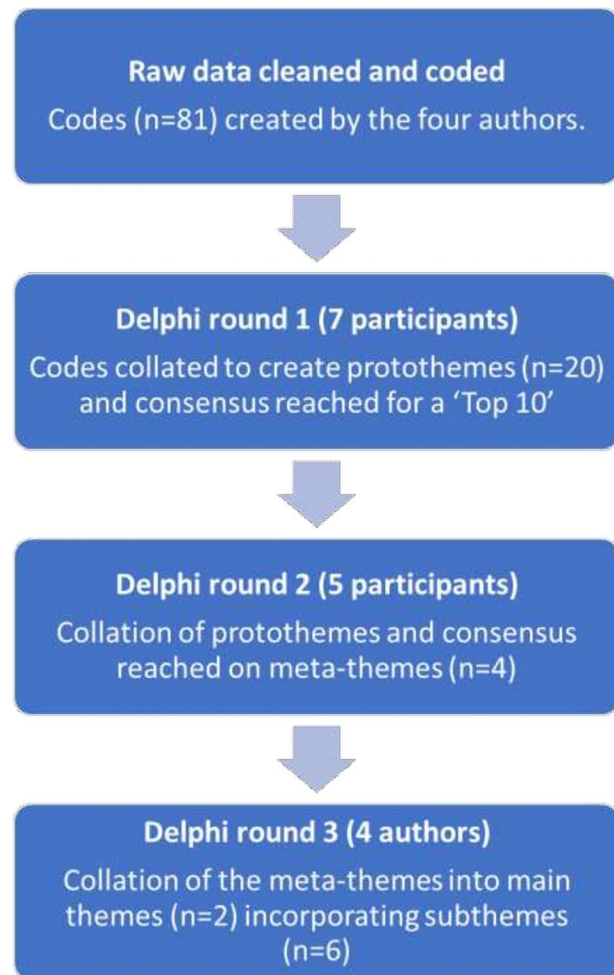

Fig. 1 Theme generation.

All participants provided written informed consent. The NHS health research authority self-assessment checklist[9] was used to determine whether this research required NHS Research Ethics Committee review. This determined that ethical approval was not needed because participants were responding regarding their experience of service delivery and development in the context of their professional status. All data collected had personal individual identifiers removed and were held securely in line with the Data Protection Act 2018.[10]

Results

Characteristics of participants

Sixteen (44%) registrars completed the survey; 12 (75%) respondents went on to participate in the Delphi rounds. Each round consisted of registrars from different stages of training and a mix of professional backgrounds. Nine

Table 1 Delphi participants

	All	Males	Females	<35 years	≥35 years
	n = 12	n = 3	n = 9	n = 7	n = 5
Female	75.0 (9)		100.0 (9)	85.7 (6)	60.0 (3)
Male	25.0 (3)	100.0 (3)		14.2 (1)	40.0 (2)
Health protection trained	n = 12	n = 3	n = 9	n = 7	n = 5
Yes	83.3 (10)	100.0 (3)	77.8 (7)	71.4 (5)	100.0 (5)
No	16.7 (2)	0 (0)	22.2 (2)	28.6 (2)	0 (0)
Professional background	n = 12	n = 3	n = 9	n = 7	n = 5
Allied Health professional	25.0 (3)	0 (0)	33.3 (3)	28.6 (2)	20.0 (1)
Doctor	25.0 (3)	0 (0)	33.3 (3)	42.9 (3)	0 (0)
Other non-medical background	50.0 (6)	100.0 (3)	33.3 (3)	28.6 (2)	80.0 (4)
Phase of training	n = 12	n = 3	n = 9	n = 7	n = 5
Phase one (first 2 years)	25.0 (3)	33.3 (1)	22.2 (2)	42.9 (3)	0 (0)
Phase two	75.0 (9)	66.6 (2)	77.8 (7)	57.1 (4)	100.0 (5)
Preparing for professional entrance examinations	n = 12	n = 3	n = 9	n = 7	n = 5
Diplomate Exam	16.7 (2)	0.0 (0)	22.2 (2)	28.6 (2)	0
Membership exam	8.3 (1)	33.3 (1)	0 (0)	14.3 (1)	0
Both exams completed	75.0 (9)	66.6 (2)	77.8 (7)	57.1 (4)	100.0 (5)
Completed master's in public health	n = 12	n = 3	n = 9	n = 7	n = 5
Yes	75.0 (9)	66.6 (2)	77.8 (7)	57.1 (4)	100.0 (5)
No	25.0 (3)	33.3 (1)	22.2 (2)	42.9 (3)	0 (0)

(75%) registrars were in the second phase of training and had completed professional exams, and 10 (83%) registrars were health protection trained. Participant information has shown in Table 1.

Survey findings

The initial thematic analysis identified 81 codes which mapped on to six topics, relating broadly to the survey questions. There was variability within each code with respondents reporting positive, negative and neutral experiences.

1. **Registrars contribution to the pandemic (5 codes)**
   Consisting of an operational, responsive health protection role, some use of generalist public health skills such as literature review, guidance writing.
2. **How this is different to business as usual (5 codes)**

   Consisting of a shift to operational COVID-19 focused work.

3. **How this is different to expected—Registrar workforce learning for the future (5 codes)**
   Consisting of an expectation of strategic leadership of the registrar workforce, involvement in strategic level

response, and in a bridging role across different organizations, how this experience could shape registrar deployment in future similar scenarios.

4. **Impact on training**

   (a) **Scope of training (7 codes)**
   Consisting of a potential opportunity cost due to switch to a reactive, operational focus on COVID-19 response, concern regarding limited learning outcome achievement which may affect training progress. Challenges presented by remote working and not feeling part of a team.

   (b) **Supervision (2 codes)**

   Consisting of reduced supervision, guidance and support from supervisors.

   (c) **Wider opportunities (2 codes)**
   Some experienced access to wider opportunities, e.g. national placements, however, others felt it limited opportunities, e.g. non-COVID-19 national roles/secondments. Opportunities to gain wider experience could have been better co-ordinated and advertised.

5. **Opportunities for learning**

(a) **Transferable learning and soft skills (28 codes)**
A wide range of skills development highlighted, e.g. accepting uncertainty, flexibility, adaptability, communication, leadership, advocacy, team working (including across organizational boundaries), remote working, working at pace, understanding the wider health and social care system, separating work and home life.

(b) **Pandemic specific learning (20 codes)**
Including improved health protection knowledge and application of outbreak control theory and observational learning related to the scale of the pandemic and response, e.g. clear communication, public health leadership, organizational and national level response and the skills infrastructure required.

6. **Feelings about personal professional role in the pandemic (7 codes)**
Ranging from satisfaction experienced in providing an operational contribution to the response, to expressions of guilt and anxiety expressed about not feeling able to do 'enough'.

Delphi findings

Two clear themes emerged. Firstly, that the early stages of the pandemic both challenged and re-affirmed the registrars' role and identity in public health and training; experienced on a personal level and a system level. And secondly, that it offered a unique and rich opportunity for learning and professional development. Underpinning these themes is a variability in experience depending on prior experience, placement and stage in training.

Identity and role as a public health registrar

"Most of my work now focuses on one health condition (COVID-19), whereas I would normally work on a portfolio of projects"

Registrars expected to be given more flexibility and supervised freedom to continue to apply their skills and continue their professional development as part of the response, instead they described a rapid shift towards becoming core members of operational public health response teams with allocated tasks and rota contributions.

"I think I could have been brought into more strategic work with consultants, looking at the whole response and what we do and why, rather than just task based"

This appeared to create a sense of dissonance between their own perception of their ability and role and their view of how colleagues perceived them, specifically accredited public health consultants. It was a challenging period of adjustment and brought frustration while establishing new roles and means of contribution. This was experienced by medical and multidisciplinary registrars and was underpinned by a feeling that they were not able to make best use of either their clinical or public health leadership skills, for example

"[I] am from a medical background and so I am trained to be on the front line and want to make a difference, and so it has been very difficult mentally/emotionally to be in limbo not working clinically or on the PH response . . . it can affect your mental health to be trained to do something but have to sit on the sidelines unable to help"

"I . . . found it difficult to get into those loops. I also felt frustrated because I could have contributed more".

Some respondents described an expectation that there would have been strategic planning and leadership regarding the deployment of the registrar workforce in a pandemic:

"In a more selfish sense, it has felt as though our skills and potential to contribute were not being acknowledged and that because we . . . are a diverse group, it was too complicated to work out what to do with us and so we were left as a bit of an afterthought"

and

"once this pandemic has passed, it is crucial to plan for how registrars could be more effectively used and trained in future pandemic. This would help registrars feel that they have made a difference/contributed to the response and learnt valuable skills for future pandemics."

Notwithstanding the variability in opportunities and the challenges of adapting to the changed context, some registrars were able to get experience of the management of the response at this early stage

"I was in the right place at the right time and asked for opportunities. I was able to play a meaningful role the response"

Others noted that the experience of being part of a significant operational response brought feelings of pride and role satisfaction:

"[I} have a set of skills that were useful, and everyone has had to make changes and adapt"

"I have learned that I do need to feel what I am doing has purpose and is making a difference hence some of the most rewarding moments have been the most operational"

"I feel a stronger and prouder identity as a public health professional".

"I feel proud to have been involved in the response and proud to be a public health professional".

Registrars learning from the pandemic and the response

"I could write pages and pages on what I've learned."

While the pandemic limited some training opportunities, such as national secondments, longer term strategic projects and academic work, most agreed that the pandemic presented them with many opportunities for active learning, observational learning and reflection. Registrars reported that they developed both 'hard' skills in areas including health protection and 'soft' skills including teamwork, communication and leadership.

Health protection learning

For many, the pandemic provided an opportunity to develop specific health protection skills through working in the PHE operational response cells, being on the on-call out-of-hours health protection rota and/or involvement in local authority health protection responses. Specific opportunities included contact tracing, a secondment to PHE Colindale to support the national pandemic response, drafting strategy documents, working on projects to support the local authority pandemic response and involvement with Local Resilience Forums.

"Where to begin! I have learned so much more about health protection than I would have done from a regular four-month placement."

Registrars working in PHE and local authorities reported observing and reflecting upon how their organizations implemented the local response to a global pandemic and how they underwent rapid organizational transformation to do so.

"An understanding of how the strategic response to a global pandemic is enacted at a local level and . . . to some extent . . . reflect on how it could be improved."

Leadership and communication

Many registrars shadowed senior colleagues and attended strategic meetings, reporting an increased understanding of specific aspects of the pandemic response including response structures, organization responsibilities and inter-organizational working. Registrars also reflected upon different communication and leadership styles which they observed, and which prompted some to consider the type of leader they aspire to be.

"I have seen examples of excellent leadership under pressure and the importance of clear communication within busy teams. I have seen leaders who have been able to manage acutely stressful situations whilst still displaying compassionate leadership".

"I think it has helped me identify my values as a leader, and what I appreciate in others."

Flexibility and work-life balance

The pandemic also resulted in a very different way of working for many registrars, which enabled them to develop several important 'soft' skills. Working from home meant that registrars had to respond to challenges presented by remote working, team working and inter-organizational working using online platforms.

"It can be difficult to generate new networks & 'corridor conversations'"

Registrars also reported the need to be flexible and adapt from slower paced strategic and project work to fast-paced responsive work. Managing uncertainty, engaging in reflective practice and being aware of their own wellbeing were also reported as important.

'Creative thinking – we have all shifted our lives and working patterns very rapidly in response to the pandemic. This has demonstrated to me that much more is possible than we think'.

Finally, personal and professional lives have become combined due to friends, family and public discourse all seeking to understand the implications of the pandemic and the role of the public health response. This was challenging in terms of work life balance, but positive in terms of developing a shared understanding of public health and what we do

'. . . I need to find a way to switch off from work and the media, so it doesn't become all-encompassing. Also . . . I'm never going to need to explain R0 to anyone again, as the BBC has kindly covered that for me!'

Discussion

Main finding of this study

The COVID-19 pandemic has significantly impacted the work, training and home-life of public health registrars. Registrars have negotiated significant challenge and uncertainty, and some have felt a lack of strategic oversight of their role and contribution. The pandemic response has also presented opportunities for learning by observation and practice (particularly health protection) and, for some,

has reaffirmed their professional identity as a public health professional.

What is already known on this topic

When this research was conducted, literature suggested that the pandemic had already impacted on both undergraduate and postgraduate medical education and various specialties including radiology[11] and surgical subspecialties.[12] There was a focus on undergraduate medical education[13] with reports of undergraduate clinical medical placements in the USA cancelled.[14]

Most published papers—primarily about medical education more generally—are correspondence and opinion articles, with only a small number of primary research articles. Views include 'potential learning opportunities for medical students' and a call to 'reshape medical education'[15] as well as perceived 'loss of collaborative experiences'[14] including the 'cancellation of clinical placements'.[16] Two original research papers which surveyed medical specialty registrars[17,18] reported adverse effects on training due to the pandemic response.

The topic of public health speciality training during the pandemic response is not yet well-evidenced as, despite a refreshed review of the literature (May 2021), we have been unable to find a definitive evaluation of the impact.

What this study adds

This study is the first original research into the impact of the COVID-19 pandemic upon specialty public health registrars in the UK.

There was found to be variation in impact on the quality of training in that some registrars felt that they had more opportunities for development, and others felt they had less. There was respondent consensus around the significant contribution of registrars to the operational pandemic response. There was also consensus on the narrowing in scope of public health activity during this time.

The study highlights the difficulty in balancing the needs of the response 'service' and the training needs of registrars as future leaders. It highlights a need for strategic co-ordination of this cohort of the public health workforce. This is necessary to maximize the opportunities for training and development and protect the quality of training, while still providing 'hands on' support to the response.

Registrars are the public health leaders of the future and will lead the response in any future pandemic and should be exposed to and contribute to operational and strategic activity in keeping with their stage of training. Additionally, while it is evident that the scope of public health will be shaped by COVID-19 for years to come, it remains important to maintain the breadth of public health training, ensuring that registrars are able to effectively develop knowledge and skills in other areas of the public health curriculum: health improvement, health care public health and the wider health protection landscape.

Limitations of this study

Contribution to the survey and Delphi rounds was voluntary, and as such open to selection bias. In line with participatory and Delphi approaches, the authors and facilitators were active contributors to the research and could have introduced selection bias in terms of thematic analysis and coding of data which was only single-coded. Surveying a wider registrar group and a wider Delphi group mitigates against dominance of the authors views within the research and in addition, the paper was shared with all contributors for review prior to submission for publication.

This original research provides an in-depth understanding of the impact of the COVID-19 pandemic upon speciality public health registrar training in the East Midlands region. The findings are therefore not directly transferrable to other medical specialties or to public health registrars in other regions, but the themes identified are felt to be generalizable to the UK specialty training programme public health registrars.

Conclusions

The COVID-19 pandemic response presented a significant opportunity for training and development but with notable variation in experience and views.

This paper has highlighted areas for consideration at operational and strategic level. It is recommended that national pandemic planning strategies specifically includes public health registrars as a workforce cohort and consideration is given as to how to best to benefit from their skills and experience. Due to the supernumerary nature of the role, honorary contract arrangements and varied placement locations, public health registrars are a flexible workforce and can act as a conduit between organizations within the public health system to help improve pandemic response processes. This should be further explored and exploited.

It is recommended that in the forthcoming review of the public health training curriculum that the UK Faculty of Public Health consult on how well the Health Protection component of training has prepared Public Health Specialists for their role in pandemic management, and whether any changes should be made.

It is also recommended that Health Education England, who is responsible for training, continues to monitor the impact of the pandemic on this workforce, ensuring that training and health and well-being needs are met. There may be learning from the approach taken by other medical specialities during the pandemic response which would be applicable to public health.

Finally, it is recommended that more research is undertaken to understand the impact of the pandemic response specifically focusing on mental health and well-being of public health registrars and wider workforce.

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Conflict of interest

The authors have no conflict of interest to declare.

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