

# Paediatric trainees' training experiences during the COVID-19 pandemic: a national survey

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## ABSTRACT

This study examines trainees' experiences of paediatric education and training during the COVID-19 pandemic. Paediatric trainees across the UK undertook an online survey. 368 of approximately 4000 trainees responded; quantitative and qualitative data were collected. Although the majority of trainees remained in their specialties, there was significant disruption to training events, teaching and learning opportunities. Despite this, for many, novel opportunities presented themselves that may not have otherwise been accessible. Trainees reported increased virtual learning, reflection, leadership and management opportunities. A breadth of trainee-identified web-based paediatric training resources were also highlighted. As the COVID-19 pandemic persists, these trainee experiences inform educators to adopt helpful training practices from other regions, including sharing of virtual learning regionally and acting-up opportunities. Trainees highlighted previously under-recognised areas of concern that can inform quality improvement initiatives, such as enhancing patient safety through tackling trainee fatigue, combating reduced clinical experience or instituting protected supporting professional activity time.

## INTRODUCTION

COVID-19, among its other effects on healthcare provision, has significantly impacted postgraduate medical education globally.<sup>1 2</sup> Disruption to medical education caused by the 2003 severe acute respiratory syndrome outbreak prompted adaptations including virtual learning.<sup>3</sup> Yet, the world was unprepared for the COVID-9 pandemic.<sup>4</sup> Undergraduate<sup>5</sup> and postgraduate training has been affected globally, with reduced clinical exposure and disruption to career progression described in adult and surgical specialties<sup>6–10</sup> and adverse psychological

impact to trainees described.<sup>11 12</sup> Chiel *et al*<sup>13</sup> anecdotally reflected on the impact of COVID-19 on paediatric trainee development but without empirical data. This study explores trainees' experience of postgraduate paediatric training in the UK during the COVID-19 pandemic; the *Infographic (online supplemental file 1)* presents key findings.

## METHODS

An online national survey was undertaken between May and August 2020. Paediatric trainees were asked to describe positive and negative teaching and training experiences via multiple choice and free-text questions. Respondents were anonymous, though regional training area (deanery) and training grade were reported.

The study was conducted in accordance with the Helsinki Declaration. Formal ethical approval was waived as respondents were anonymous healthcare workers.<sup>14</sup>

The Royal College of Paediatrics and Child Health (RCPCH) agreed to the survey being conducted, which was disseminated through local paediatric schools, regional RCPCH trainee representatives, the RCPCH eBulletin and word of mouth. Descriptive statistics were used to evaluate demographic data. Free-text boxes used critical incident technique questioning to facilitate theory generation relating to the most positive and negative experiences of paediatric training during COVID-19, dual-coded by two investigators (GS/SA).

## RESULTS

Three hundred and sixty-eight responses were obtained. Three were excluded as not paediatric trainees, leaving 365. There was a balanced representation of training grades and deaneries ([table 1](#)).

**Table 1** Respondents' characteristics

Characteristic	Number (%)	
Training grade	ST1	32 (9)
	ST2	44 (12)
	ST3	38 (10)
	ST4	41 (11)
	ST5	49 (13)
	ST6	55 (15)
	ST7	50 (14)
	ST8	30 (8)
	OOPR	7 (2)
	OOPE	4 (1)
	Clinical fellow	8 (2)
	Parental leave	3 (1)
	Other (post-CCT working as locum reg-ST8; academic clinical fellow; OOPC working as clinical fellow)	3 (1)
	No response	1 (0)
	Deanery	East Midlands
East of England		35 (10)
Kent, Surrey and Sussex		17 (5)
London		25 (7)
North East		23 (6)
North West		32 (9)
Northern Ireland		20 (5)
Peninsula		19 (5)
Scotland		26 (7)
Severn		24 (7)
Thames Valley		23 (6)
Wales		19 (5)
Wessex		30 (8)
West Midlands		27 (7)
Yorkshire and Humber		21 (6)
No response	1 (0)	

CCT, certificate of completion of training; OOPC, out-of-programme for career break; OOPE, out-of-programme for experience; OOPR, out-of-programme for research; ST, specialty trainee.

### Impact on work and training

Change in work schedule was common, reported by 316 (87%), and some reported more than one of the elements next described. The majority of trainees, 211/365 (57%), remained in their clinical area with rota changes. Of the whole cohort (365), 65 (18%) were redeployed within paediatrics and 16 (4%) to adult services. Increased working hours were reported by 35 (10%) and 128 (35%) provided unplanned (not originally rostered) out-of-hours cover. Twenty-one (6%) required shielding (not undertaking face-to-face clinical work).

A total of 322 (88%) trainees reported cancellation of one or more of the following teaching events: statutory/mandatory training (55%); mandatory paediatric course (eg, child protection) (47%); life support course (29%); conference at which they were due to present

(24%); and conference they were due to attend but not present at (31%). Teaching related to a postgraduate qualification (eg, MSc and postgraduate diploma) was cancelled for 6%.

Conversely, 68% found learning opportunities not previously available including online and social media-facilitated teaching resources. In 'free-text' comments, trainees reported novel opportunities to improve leadership and management skills, for example, through personal experiences managing acute changes in work environment, and increased awareness of online resources for developing these skills, including The Edward Jenner Programme.<sup>15</sup>

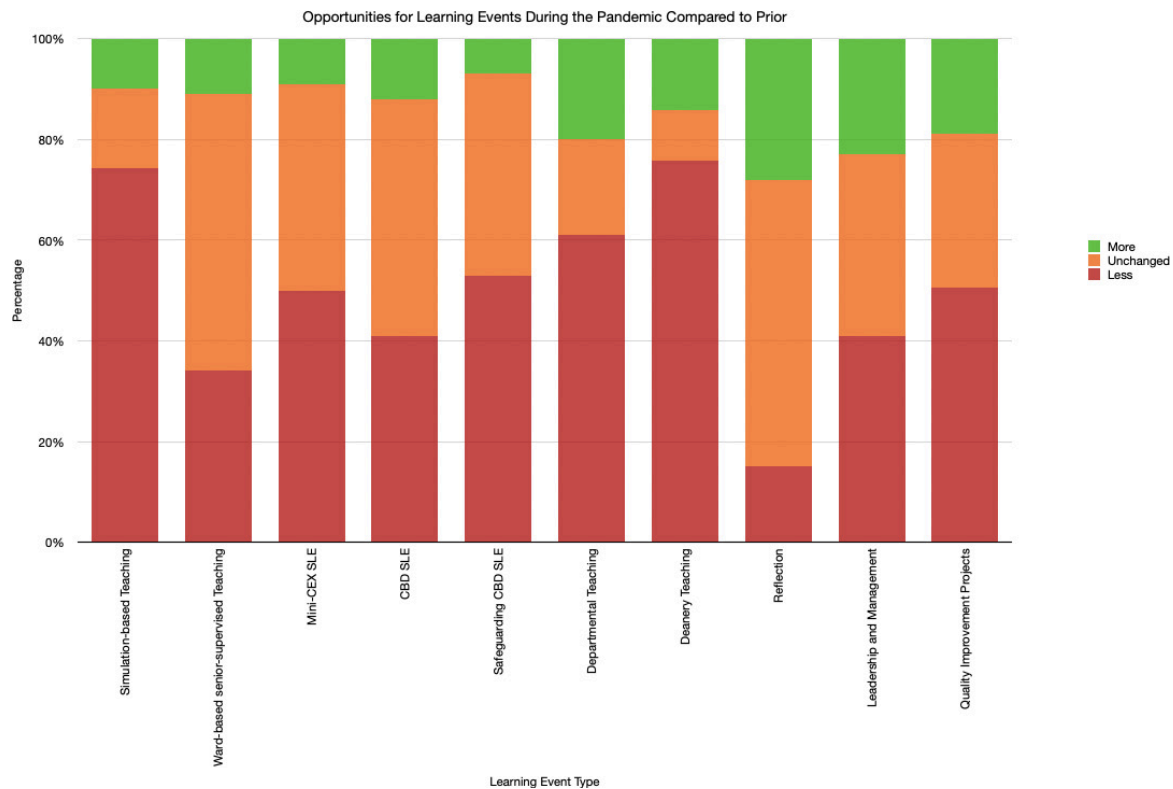
Opportunities for learning events, including supervised learning events (SLEs), were reduced (figure 1), with simulation and deanery-based teaching being most impacted (reduced for 75% trainees). Reflection opportunities were least negatively impacted. In fact, 28% reported increased reflection possibilities, while 23% reported increased leadership and management opportunities. There was no difference in responses between specialty trainee (ST) 1-3 (junior paediatric trainee) and ST4+ (senior paediatric trainee) groups ( $\chi^2$  analysis,  $p=0.06-0.76$ ). Trainees widely reported reduced exposure to procedures.

Attendance at virtual teaching was reported by 93% and across all deaneries. For 67%, this was department based; 64% attended deanery-based virtual teaching; 49% had teaching within their team and 40% within their hospital. Additionally, 28% of virtual teaching was from national sources and 14% from international sources. Virtual teaching was mostly initiated by seniors – consultants (68%) and middle-grade doctors (67%) rather than at deanery level (47%), SHO (ST1-3) grade (18%) or other (17%).

During the pandemic, 71% participated in supplementary online learning. The referenced online resources from this survey can be found on the Paediatric Innovation, Education and Research Network website.<sup>16</sup>

### Annual Review of Competency Progression (ARCP)

Completion of required learning events in preparation for ARCP (UK system of annual appraisal for doctors in training) was anticipated by 82%. There was no significant difference between ST1-3 and ST4+ groups ( $\chi^2$   $p=0.179$ ) and no difference between responses of those at a transition point – stepping up to a higher working grade with additional responsibility (eg, ST3, ST5 and ST8) compared with those not (both 82%). Those who did not anticipate completion of required learning events offered the following reasons: inadequate SLEs (65%); lack of safeguarding exposure (33%); specialty-time reduction (47%) and reduced exposure to required pathologies (33%). The reportedly affected RCPC Progress curriculum domains are shown in figure 2.



**Figure 1** Reported impact of the COVID-19 pandemic on various educational activities. Decreased opportunity, although common was not universal, and a proportion observed increased opportunity/exposure. This was reported most commonly in opportunity for reflection. There was no difference observed between more junior medical grades (ST1-3) and more senior trainees (ST4+). CBD, case-based discussion; Mini-CEX, mini-clinical evaluation exercise; SLE, supervised learning events; ST, specialty trainee.

### Themes generated from trainees' most positive and negative training experiences

Four over-riding themes epitomise trainees' positive experiences of training during the pandemic: 'changed practice', 'new skills', 'extra time' and 'teamwork'. Within reported negative experiences, four key themes were also evident: 'training', 'clinical experience', 'safety' and 'well-being'. Table 2 details these with subthemes and illustrative quotes.

### DISCUSSION

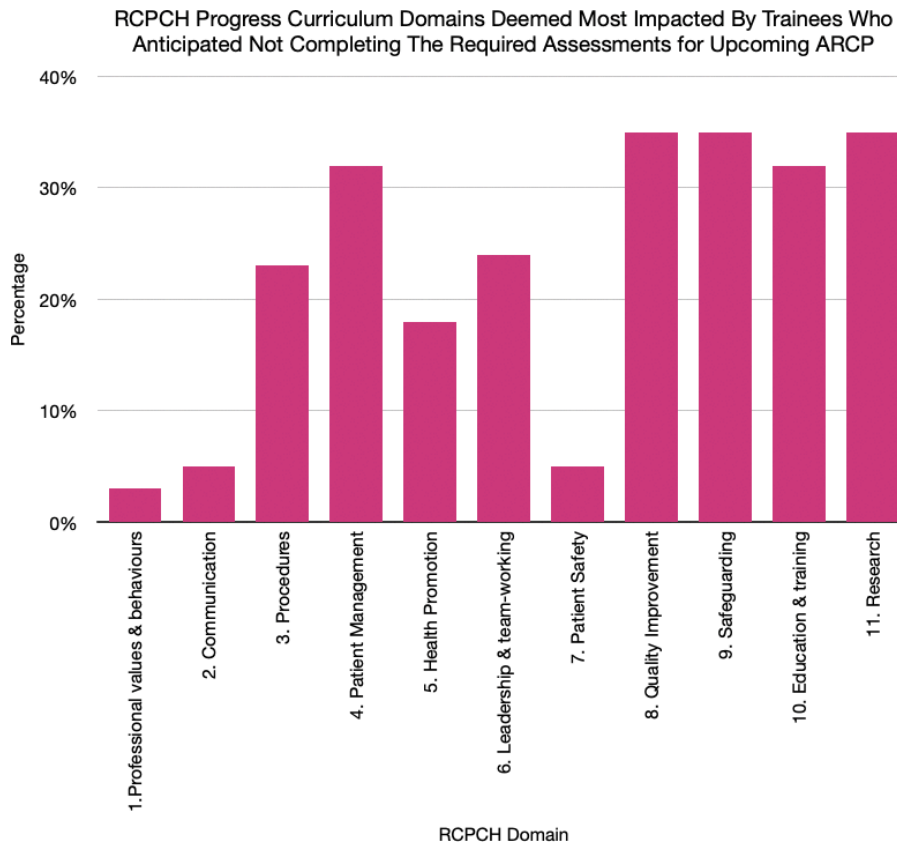
As the first study reviewing paediatric trainees' experiences during the COVID-19 pandemic, the results highlight that alongside significant disruption to traditional training, new learning opportunities have presented themselves.

The COVID-19 pandemic has positively impacted flexible learning opportunities with wider use of virtual platforms increasing accessibility at local, regional, national and international levels while decreasing training's financial burden. The report of cancelled teaching by 88% of trainees may partially reflect events cancelled early in the pandemic but also that virtual learning is not always feasible. The UK's Advanced Paediatric Life Support certification provider still require a socially distanced face-to-face course component.<sup>17</sup> Limited course spaces and

COVID-19-related travel restrictions may continue to affect trainees gaining this mandatory qualification.

Reduced opportunities for learning events (including SLEs) were reported, similar to primary care trainees.<sup>1</sup> These events are important requirements for trainee progression. Although no minimum number, there are some mandatory events throughout training,<sup>18</sup> and trainees need access to seniors for their completion. Reduced opportunities for safeguarding-based SLEs were highlighted as potential threats to progression, although an increase in such cases may be more likely during the pandemic.<sup>19 20</sup>

For 18%, concern was present regarding progression at ARCP despite deaneries' assurances and the RCPCH introducing novel COVID-19 specific outcomes, 10.1 (acquisition of competencies delayed by COVID-19 but can progress to next training stage) and 10.2 (acquisition of competencies delayed by COVID-19, but trainee is at a critical progression point and additional training time is required), acknowledging the effects on training.<sup>21</sup> The RCPCH reported to the authors that 4.1% of trainees received outcome 10.1 and 0.9% an outcome 10.2, suggesting potentially unwarranted anxiety. Trainees commonly reported cancelled events with concerns regarding progression; virtual presentations and crediting trainees for accepted abstracts despite meeting cancellations may mitigate this.



**Figure 2** Reported domains impacted in respondents not anticipating to meet annual requirements for ARCP. Domains are themes within the curriculum for paediatric trainees for which learning outcomes must be evidenced for each training level. ARCP, Annual Review of Competency Progression; RCPCH, Royal College of Paediatrics and Child Health.

Quality improvement initiatives may use this study to improve the experience and well-being of those redeployed, shielding or with extra workload. For example, recognising the convenience of remote working, protected time to attend virtual clinics could facilitate maintenance of specialty experience. ‘Keeping-in-touch’ days may aid redeployed trainees to maintain exposure.

The survey highlighted issues impacting well-being, with morale described as ‘rock bottom’. Some trainees voiced ‘wanting [to] quit paed training’, and understanding causes for this compromised well-being may improve retainment within training; facilitation of breaks with time off the ward was one suggestion provided that could help day-to-day well-being. Rota-related issues, including frequent rota reconfiguration with inappropriate pay adjustment and lack of in-built supporting professional activity (SPA) time, both despite RCPCH recommendations,<sup>22 23</sup> contributed negatively to well-being.

Trainees report fatigue due to ‘relentless’ work patterns in reconfigured rotas, suggest intense out-of-hour shifts should occur only in the short term and that the burden of cover for last-minute absences be equally shared between consultants and junior doctors.

Well-being was also compromised where trainees felt inadequately informed or consulted regarding

changes, which could be alleviated by ‘more communication, even if just explanation of decisions or uncertainty’ and engagement with consultants about managing workload and training. Childcare challenges additionally compromised well-being.

Trainees wanted positive changed practice to continue beyond the pandemic. For many, COVID-19 provided extra time to use more meaningfully. In contrast, some experienced a lack of SPA time, reporting having to use time outside of working pattern. Similarly, although the ability to catch-up on missed teaching via recordings or attend virtual attendance from home was widely commended, some expressed concern that this would be expected in their own time. The RCPCH<sup>23</sup> recommends time allocated each month to trainees for SPA completion. Formalising SPA time may address these differences, further enhancing trainee well-being.

The heterogeneity in opportunities for SLEs justifies this study’s rationale to highlight areas of good practice to prompt improvement where trainees feel it is most required. Educational and clinical supervision varies between supervisors, hospitals and deaneries. RCPCH-led courses<sup>24</sup> aim to improve quality and reduce heterogeneity, and training and appraisal are required to maintain registration on the General Medical Council (GMC) approved trainers list.<sup>25</sup> During the pandemic, supervision was particularly

**Table 2** Themes generated from trainees' most positive and negative training experiences**Themes from trainees' positive experiences**

<b>Changed practice</b>	
Adopting innovation	'Removal of bureaucratic and motivational barriers to instituting change- it is possible and also possible quickly'.
Remote working	'Increased use of virtual meetings meaning it is possible to join meetings from other sites or home'.
Virtual learning	'Change of teaching to zoom to provide teaching across the deanery... was really useful, especially as these were recorded and could be accessed at a later date'.
<b>New skill</b>	
Acting up	'More opportunities to step up to a senior level due to staff shortage'.
Leadership and management	'Able to understand the structure of the response and how authority varies between different levels of the organisation'.
Managing complex patents	'We don't usually see the ward round and detective work around complicated cases. I have had a chance to see a child... and see them through to a conclusion'.
Novel clinical experiences	'Thinking more about global health, public health and health promotion/prevention of disease'.
Virtual consultation	'A lot of time spent doing telephone outpatient clinics, I had much more experience in outpatients than I ever would on a normal rota'.
<b>Extra time</b>	
Admin	'More time to spend on updating eportfolio and finishing projects such as guidelines'.
Projects	'Less clinical work [so] more time to spend on QI project - my most successful project yet'.
Reflection	'I have read around interesting cases, searched for relevant journal articles and because they are interesting to me I've gained a lot from this'.
Self-directed learning	'Now we have more time to learn and teach and feels like actual training rather than just service provision'.
SLEs	'More time for consultants to teach and complete wba(work-based assessments)'.
Facilitating learning	'Have been better staffed and quieter than usual so I have had good opportunities to do informal teaching for others'.
Work-life balance	'Felt better work/life balance and hence actually enjoying work more'.
<b>Teamwork</b>	
Senior support	'Regular pragmatic engagement with consultant body about managing workload and training opportunities'.
Team morale	'The pandemic has improved our team cohesion and interpersonal relationships'.

**Themes from trainees' negative experiences**

<b>Training</b>	
Progression	'The worries regarding progress through training have not been addressed at the department level, where some of the changes need to be made to enable trainees to meet the new ARCP criteria'.
Cancelled event	'Cancelled study leave which I had already paid for and have therefore lost out financially – hotels, train tickets etc'.
Reduced opportunities	'There is less consultant presence on the wards to allow social distancing so clinical workload has seemed to increase for junior medical team but without increased opportunities for consultant led WBPAs and training'.
Teaching	'Unable to attend deanery teaching sessions, reduced departmental teaching'.
<b>Safety</b>	
Fatigue	'Working endless Nights and Long days takes its toll. We are all doing it because we have a sense of duty - but we are 8 weeks in and are feeling fatigued. This is manageable for short periods but not for months on end'.
Inadequate PPE	'I was told I was "self interested" and "a doom monger" by some consultants for requesting PPE at the start of the pandemic for my colleagues and myself'.
Inadequate supervision	'Being redeployed - no induction, no clinicians responsible / expecting us / acting as supervisors'.
Inadequate staffing	'There was minimal staffing in the paediatric department which meant that the paediatric team were often short and therefore a higher workload was passed on to the junior doctor (x1) that was left on the ward'.
Communication breakdown	'Different staff groups receiving different information regarding how the hospital should be running. E.g. who gets swabbed, what ppe to wear, where patients are to be admitted'.
<b>Clinical experience</b>	
Redeployment	'Moving to several different departments in 3 months and being changed to 4 different rotas in short notice'.
Shielding	'Shielding at home was difficult personally, but it also massively reduced my training opportunities. It took a while for me to find something to do at home'.
Extra workload	'Felt we were covering vast amount of GP work, trying to help ED as much as possible whilst still doing our day-to-day job'.
Reduced exposure	'Less patients attending acutely and patients being physically seen in clinic'.

Continued

Table 2 Continued

## Themes from trainees' negative experiences

Well-being	
Rota	'I have also had significantly more on calls which has affected my energy and mental health to a degree and I feel has increased my risk of burnout'.
Suboptimal patient experience	'Dealing with bereaved parents after an unsuccessful neonatal resuscitation where the parents were unable to have the support of family and friends around them and would be unable to have a proper funeral'.
Childcare	'Also changing child care has been difficult to juggle with changing rotas. This has made things more stressful generally'.
Inadequately informed or consulted	'Appreciation of the stress it caused trainees. Better info of who and how to contact people. More communication even if just explanation of decisions or uncertainty'.
Morale	'It felt that we had completely lost our sense of team, having not yet developed a strong sense of teamwork to begin with. This increased team anxieties, and affected emotions and work ethic'.

Themes from trainees' positive experiences in blue background. Themes from trainees' negative experiences in green background.

ARCP, Annual Review of Competency Progression; ED, emergency department; GP, general practice; PPE, personal protective equipment; QI, quality improvement; SLEs, supervised learning events.

criticised where senior presence was lacking, with supervisors reportedly failing to acknowledge trainee concerns or where leadership was lacking in dealing with emerging challenges.

### LIMITATIONS

Limitations include the potential for both responder selection bias (extreme experiences more likely to respond, for example) and acquiescence bias. Local and national changes in training practice during the data collection period, such as the introduction of new ARCP outcomes, may have led to under-reporting of initial challenges or resolved problems through recall bias.

### CONCLUDING REMARKS

The heterogeneity of responses suggests differing experiences across deaneries, highlighting the importance of national collaboration in order to recognise local weaknesses and identify solutions. Furthermore, findings provide a basis for interspeciality and international shared learning.

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