


BMJ Open '...the way it was staffed during COVID is the way it should be staffed in real life...': a qualitative study of the impact of COVID-19 on the working conditions of junior hospital doctors

John-Paul Byrne ¹, Jennifer Creese,¹ Anne Matthews,² Aoife M McDermott,³ Richard W Costello,⁴ Niamh Humphries¹

To cite: Byrne J-P, Creese J, Matthews A, *et al.* '...the way it was staffed during COVID is the way it should be staffed in real life...': a qualitative study of the impact of COVID-19 on the working conditions of junior hospital doctors. *BMJ Open* 2021;**11**:e050358. doi:10.1136/bmjopen-2021-050358

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2021-050358>).

Received 17 February 2021
Accepted 28 July 2021



© Author(s) (or their employer(s)) 2021. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

¹Research Department, Royal College of Physicians of Ireland, Dublin, Ireland

²School of Nursing and Human Sciences, Dublin City University, Dublin, Ireland

³Cardiff Business School, Cardiff University, Cardiff, Wales, UK

⁴Department of Medicine, Royal College of Surgeons in Ireland, Dublin, Ireland

Correspondence to

Dr John-Paul Byrne;
johnpaulbyrne@rcpi.ie

ABSTRACT

Objectives COVID-19 has prompted the reconfiguration of hospital services and medical workforces in countries across the world, bringing significant transformations to the work environments of hospital doctors. Before the pandemic, the working conditions of hospital doctors in Ireland were characterised by understaffing, overload, long hours and work–life conflict. As working conditions can affect staff well-being, workforce retention and patient outcomes, the objective of this study was to analyse how the pandemic and health system response impacted junior hospital doctors' working conditions during the first wave of COVID-19 in Ireland.

Methods and analysis Using a qualitative study design, the article draws on semi-structured interviews with 30 junior hospital doctors. Informed by an abductive approach that draws iteratively on existing literature and empirical data to explain unexpected observations, data were analysed using inductive and deductive coding techniques to identify the key themes reflecting the experiences of working in Irish hospitals during the first wave of COVID-19. We use the Consolidated Criteria for Reporting Qualitative Research to present this research.

Results Our analysis generated three themes which demonstrate how COVID-19 prompted changes in medical staffing which in turn enhanced interviewees' work environments. First, interviewees felt there were more doctors staffing the hospital wards during the first wave of the pandemic. Second, this had positive implications for a range of factors important to their experience of work, including the ability to take sick leave, workplace relationships, collective workplace morale, access to senior clinical support and the speed of clinical decision-making. Third, interviewees noted how it took a pandemic for these improvements to occur and cautioned against a return to pre-pandemic medical staffing levels, which had negatively impacted their working conditions and well-being.

Conclusions Interviewees' experience of the first wave of COVID-19 illustrates how enhanced levels of medical staffing can improve junior hospital doctors' working conditions. Given the pervasive impact of staffing on the quality of interviewees' work experience, perhaps it is

Strengths and limitations of this study

- A qualitative study that advances our understanding of the frontline experience of junior hospital doctors during the first wave of the COVID-19 pandemic in Ireland.
- This frontline perspective is key to understanding how the unanticipated shock of the pandemic played out on the hospital floor and what lessons can be gleaned from their experience.
- As a key component of the medical workforce in Ireland, the experience of junior hospital doctors represents a key perspective in learning from the COVID-19 pandemic.
- Learning from the experiences of those on frontline can inform the development of more sustainable work practices for junior hospital doctors. This is particularly important during the COVID-19 pandemic and in its immediate aftermath.
- The article focuses solely on the working conditions of hospital doctors and does not address the experience of other healthcare workers (eg, nurses, allied health professionals).

time to consider medical staffing standards as a vital job resource for hospital doctors and a key policy lever to enhance medical workforce retention. In a global context of sustained COVID-19 demands, pressures from delayed care and international health worker shortages, understanding frontline experiences and identifying strategies to improve them are vital to the development of more sustainable work practices and to improve doctor retention.

INTRODUCTION

The COVID-19 pandemic fundamentally changed the context and nature of healthcare delivery globally. Healthcare systems altered how they delivered care to meet the needs of patients with COVID-19, expand capacity and protect patients and staff from infection.



Specific adaptations included: restricting outpatient and elective services, creating COVID and non-COVID care pathways with related safety protocols, expanding capacity by taking over private hospitals, additional recruitment combined with large-scale redeployment of health workforces and a significant increase in the use of telemedicine.^{1–3} This has brought significant transformations to the hospital work environment. In an acute care context, where working conditions directly impact the safety and well-being of staff and patients alike, it is vital that we listen to, and understand, the experiences and concerns of frontline healthcare workers.^{4,5} The frontline perspective must be heard if health systems are to understand how this unanticipated shock⁶ played out on the hospital floor; to ascertain what lessons can be gleaned from the pandemic, and what resources are required to ensure the continued provision of health services after pandemic.^{7,8} The need to engage with frontline health workers is even more pertinent when we consider that, in Ireland before the pandemic, frontline staff were already under strain from the demands of working within a health system with significant resource constraints.

Prior to COVID-19, working conditions for hospital doctors in the Irish health system were difficult and deteriorating.⁶ To illustrate the infrastructural context, in 2017, Ireland had fewer doctors (3.1) and hospital beds (3) per 1000 population than the Organisation for Economic Co-operation and Development (OECD) average of 3.5 for doctors and 4.7 for beds, and the highest occupancy rate (95%) of inpatient hospital beds in the OECD.⁹ In early 2020, the Irish public health system had five intensive care beds per 100 000 population compared with a European Union (EU) rate of 14.5¹⁰—illustrating a limited intensive care infrastructure when compared with its European counterparts. These OECD and EU rates indicate a health system with comparatively restricted resources—which affect the working conditions of hospital doctors.¹¹ Research has shown that, before the pandemic, hospital doctors in Ireland struggled with understaffing, work overload, long and unpredictable hours and poor work–life balance.^{6, 11–13} These extreme working conditions drove high rates of burnout, emigration and medical workforce attrition,^{14–16} and reflect a health system under strain due to historic underinvestment, austerity-related cuts and infrastructural deficits.^{17, 18} It was against this backdrop that the Irish health system, and its frontline staff, responded to the sudden and increased demands of the COVID-19 threat.

To help suppress the transmission of COVID-19 and diminish the burden placed on hospitals, the Irish government employed a range of public health measures. These included: the mandatory closure of non-essential businesses; asking all workers to work from home where possible; banning of large gatherings; advising over 70s and medically vulnerable individuals to ‘cocoon’ at home; and introducing nationwide restrictions on travel and movement during the COVID-19 case number peaks of April, October and December 2020.¹⁹ To meet

the anticipated demands in acute care, hospital services were restructured primarily through the closure of outpatient clinics and cancellation of elective procedures, the acquiring of private hospital capacity and the rapid development of COVID and non-COVID care pathways.²⁰ The COVID-19 response also saw the introduction of a range of health workforce and surge capacity strategies including: the redeployment of hospital doctors, the early entry of interns into the workforce and a campaign to recruit additional healthcare workers (eg, ‘Be on Call for Ireland’).^{19–21}

This reconfiguration of hospital services and doctors to meet the immediate needs of patients with COVID-19 was an acknowledgement of the pandemic threat. It was driven by the need to ensure sufficient numbers of health workers, beds, personal protective equipment (PPE), masks and ventilators to protect staff and provide adequate and safe care during the pandemic. However, as the impact of the COVID-19 pandemic extends into 2021, a longer term approach is required. It is critical we do not lose sight of the experiences and concerns of frontline staff who are the ‘backbone’ of health systems, and have been coping with colossal and prolonged pandemic-related change to their working conditions and lives.²² For hospital doctors, the pandemic, and subsequent restructuring of services and reconfiguration of workforces, has brought sudden redeployment, PPE use, high infection risk, and new methods, environments and stressors of practice.²³ As the ‘canaries’ in the COVID coalmine,²⁴ understanding the impact of, and learning from, these transformed working conditions is critical to the ongoing pandemic response and future health service strategies.^{1, 25} Subsequently, to inform such learning, the objective of this study was to explore the experience of junior hospital doctors on the frontline of COVID-19.

‘Junior’ hospital doctor is a term which refers to all doctors who have completed a medical qualification but have not reached consultant or specialist grade. In the Irish health system, these doctors are referred to as non-consultant hospital doctors (NCHDs) which include hospital doctors at all stages of postgraduate medical training (ie, intern to specialist registrar), as well as NCHDs not on postgraduate training schemes who are typically employed on 6–12 months contracts, or as agency locums.²⁶ We focus on the experience of junior hospital doctors as they comprise the majority of hospital doctors employed in the Irish public health service (68%)²⁷ and, to a greater extent than hospitals in other countries, Irish hospitals rely heavily on the work of these doctors to deliver care.^{26, 28} Previous research has shown that junior hospital doctors have somewhat different expectations of their medical careers when compared with earlier generations,²⁹ and are perhaps more likely to emigrate to achieve working life goals of shorter working hours and greater work–life balance.³⁰ Research from the UK and Australia has also highlighted the powerful impact of junior hospital doctors’ work experiences, illustrating how perceptions of work environments can influence

career decisions,³¹ and the detrimental impact that extended working hours can have on mental health.³²

With regard to the pandemic response in Ireland, junior hospital doctors were a key part of medical workforce surge strategies (eg, accelerated graduation of medical students into intern roles) and reconfigured COVID and non-COVID care pathways. They staffed patient-facing roles on the medical frontline during COVID-19 and therefore had high risks of COVID-19 infection,³³ especially those working in acute receiving specialties.^{34 35} In sum, the working lives of junior hospital doctors were profoundly impacted by the COVID-19 pandemic.³⁶ In this article, we explore how the pandemic and the health system response affected the working conditions of junior hospital doctors during the first wave of COVID-19 in Ireland. As well as meeting the study objective and reporting our findings, we also consider how the insights provided by junior hospital doctors might be used to enhance working conditions and improve hospital doctor retention in the Irish health system.

METHODS

Study design and participants

This study is part of a wider interdisciplinary research project, the *Hospital Doctor Retention and Motivation* (HDRM) project.³⁷ HDRM is based in the Royal College of Physicians of Ireland and funded by the Health Research Board to conduct primary research to generate insights which will inform and improve doctor retention policy in the Irish health system. To date, HDRM researchers have published findings on the extent, and job-related drivers, of doctor emigration,^{6 30} the organisation of medical work¹¹ and hospital doctors' struggle for work-life balance.¹² For this article, underpinned by interpretivist assumptions and pragmatic, descriptive qualitative aims,³⁸ we conducted semi-structured interviews with junior hospital doctors to explore their experiences of working in Irish hospitals during the first wave of the COVID-19 pandemic in spring 2020. The Consolidated Criteria for Reporting Qualitative Research guides the reporting of this study.³⁹

Using purposive and snowball sampling techniques, a call for interviewees was launched on 10 June 2020 via the HDRM project website and social media. A total of 48 one-on-one, semi-structured interviews were conducted. Prior to each interview, doctors were provided with an information leaflet that outlined the goals of the HDRM project, the rationale for this piece of research, what participation involved and data processing details. A digitally signed informed consent form was completed before each interview.

Data collection

Through close engagement with participants, a researcher's personal characteristics can influence the nature of the qualitative data collected.³⁹ However, this is minimised by the varying characteristics of the interviewers

who comprised: the principal investigator who is female, and a senior health systems researcher (NH), a male post-doctoral researcher with a background in sociology (J-PB) and a female postdoctoral researcher with a background in social anthropology (JC). All interviewers hold PhDs and are experienced in qualitative methods. The team also held weekly debrief meetings to discuss the interview process as data collection progressed.

Due to pandemic-related social distancing measures and travel restrictions, semi-structured one-on-one interviews were conducted via Zoom or telephone—which ever was preferable for the interviewee. Interviews were conducted by the project team (NH, J-PB, JC) between 12 June and 10 July 2020—a period between the April and October 2020 COVID-19 peaks in Ireland.¹⁹ Interviews lasted an average of 45 min with a range of 23–93 min. The interview topic guide was informed by previous HDRM research on hospital doctors' work,^{6 11 12} and organised around seven themes: demographic information, working as a doctor (before and during COVID-19), the experience of work during the pandemic, the impact of the pandemic on well-being, doctors who returned to Ireland to work during the pandemic for COVID-19 (if applicable), doctors who had emigration plans thwarted by COVID-19 (if applicable) and future career plans.

This article depicts the experience of the 30 junior hospital doctors interviewed among the 48 interviewees. As set out in the Introduction section, these doctors represent the future of the medical profession and as such their concerns and perspectives are vital for informing crisis responses and medical workforce strategies. Interviews were audio recorded and transcribed verbatim by a third party. Transcripts were deidentified by interviewers and all interviewees were offered the opportunity to review and modify their transcripts for corrections prior to analysis. The interviewers (NH, J-PB, JC) had no prior professional relationship with the 30 interviewees. Data were stored, organised and analysed using MaxQDA software (V.20.1.1).

Data analysis

Data analysis was informed by abductive principles which seek to provide likely explanations for surprising observations emerging within qualitative data through both existing literature and analytical methods.⁴⁰ Thematic analysis was conducted⁴¹ using a combination of a priori codes set by the researchers prior to analysis (ie, deductive coding) and a posteriori codes identified within the data (ie, inductive coding).⁴² This combination enabled the researchers to explore the topics of interest to the HDRM project while also allowing space to investigate specific data-driven issues and experiences. NH and J-PB conducted primary coding based on the topic guide themes. JC reviewed samples of this coding process. Subcoding of larger codes (eg, working during COVID-19) was undertaken by J-PB and JC. A project review meeting was conducted prior to, and after, each coding stage. For this article, J-PB inductively analysed the data



indexed to the primary codes of ‘working during COVID’ and ‘staffing and COVID’. In line with an abductive approach,⁴⁰ a key surprise emerged in how interviewees discussed the impact of increased medical staffing levels and the positive effect this had on their work experience. Reflecting the emergent focus on the positive implications of staffing levels, J-PB revisited the codes to inductively explore the junior hospital doctor data set for experiences which may reinforce or contradict these themes.

Patient and public involvement

Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

RESULTS

In this section, we detail the three themes generated from our analysis. These themes show interviewees’ perceptions of how changes to staffing levels actually improved their experience of work during the first wave of COVID-19. We discuss how interviewees perceived more doctors in direct clinical work on the wards; how this positively influenced sick leave, relationships, morale and access to clinical support; and finally, how it took a pandemic to see these improvements. It is worth noting that factors unrelated to staffing were also present in the data. We have written elsewhere on the impact of these non-staffing factors (eg, ward-based work, PPE, fear of the virus, career plans, etc) on interviewees’ working lives, morale and well-being.^{43 44} **Table 1** provides a profile of the interviewees included in this article.

The following account represents an archetypal experience for the junior hospital doctors interviewed who described their working conditions during the first wave of COVID-19 between March and May 2020. It illustrates how, paradoxically, COVID-related restructuring improved the working conditions of interviewees when compared with pre-COVID experiences (eg, winter 2019).

...go in, do your job, be well-staffed, be supported... morale was high, despite the fact that we were in a global pandemic.... we got this glorious glimpse of

what life could be like in work.... we actually felt like for once we had the number of staff we needed to do the job.... Pre-COVID, we were in crisis. We didn’t have enough staff, we didn’t have enough beds... And then COVID came along and everything was rejigged. More staff were added through various avenues.... More beds were allocated. Everything was streamlined. And all of a sudden we had a working healthcare system.... now that COVID is ‘over’, which it obviously most definitely isn’t, we’ve gone back to the crisis...and everyone is tired and burnt out again. (P48)

Expanding on the narrative above, we discuss junior hospital doctors’ experience of increased medical staffing within hospitals restructured in response to COVID-19, and the positive impact this had on their experience of work.

There were more doctors on the hospital floor

Interviewees described how Irish hospitals restructured their services in anticipation of a surge of COVID-19 cases. Outpatient clinics and elective surgeries were cancelled, and large numbers of doctors were redeployed to ward-based care to staff both COVID and non-COVID care pathways. As a result of the restructuring, interviewees noticed increased numbers of medical staff on the hospital floor.

.... [hospital name] almost doubled their SHO [senior house officer] workforce.... We were very well staffed on the ward...so that was good. (P47)

...on call, it was definitely better staffed than usual. Usually it’s...two SHOs [senior house officers] and one Reg [registrar] for like the whole hospital and the intern.... on COVID roster, it was like three SHOs, two REGs, two interns... (P15)

It was better than I remember.... they just got loads of extra staff because of the pandemic... It was really good. (P31)

Contrasting their experiences of working during COVID-19 with previous experiences in the Irish health

Table 1 Interviewee profile (n=30)

Gender	Female	22 (73%)	Degree year	2016–2019	20 (66%)
	Male	8 (27%)		2011–2015	8 (27%)
				2006–2010	2 (7%)
Grade	Specialist registrar (SpR)*	8 (27%)			
	Registrar†	3 (10%)			
	Senior house officer (SHO)‡	13 (43%)			
	Intern§	6 (20%)			

*Advanced higher specialty trainee doctor.

†Experienced specialty (trainee or equivalent) doctor.

‡Basic specialty trainee (or equivalent) doctor.

§New graduate doctor.

system, interviewees commented on how: (1) there were simply more doctors around; (2) this was an unfamiliar experience, and (3) the medical staffing levels during COVID-19 should have been in place long before COVID-19; ‘...hospitals are probably more properly staffed than they ever have been’ (P12). For these junior hospital doctors, sufficient staffing during COVID-19 led to more manageable workloads and more predictable working hours during the first wave of the pandemic in Ireland.

More doctors improved the staff experience

Interviewees described how their working conditions had improved as a result of increased medical staffing during COVID-19. Increased staffing made a significant difference to their work experience as it: (1) facilitated sick leave and call cover, (2) improved morale and relationships, and (3) increased availability of clinical support.

Facilitated sick leave and call cover

Working on the frontline, junior hospital doctors were at a high risk of contracting COVID-19. As a result, medical teams constantly had to be reconfigured as doctors self-isolated or quarantined when they came into contact with the virus. Additional staffing capacity was provided in anticipation of doctors being absent due to COVID-19 protocols. Increased medical staffing levels provided teams with the flexibility to respond to sudden and unpredictable rota gaps as ‘reserves’ were used to cover shifts.

...there were way more of us.... It’s actually really nice to be adequately staffed. There was sick cover and cover if you couldn’t do your call. You were encouraged not to come in if you were unwell.... It was really nice.... before that, if you were sick or couldn’t come in, you were leaving people really stuck...you’d feel really bad. But it wasn’t like that during COVID.... we just had enough staff.... we had eight reserves for the day job.... we never have reserves.... that was to facilitate, I suppose, being able to be unwell... (P24)

With additional staff available, interviewees felt it was ‘...easier to take any [sick] leave’ (P47). This contrasted with interviewees’ previous experiences where taking sick leave meant leaving colleagues ‘really stuck’. Before the pandemic, a desire not to leave your team short staffed encouraged presenteeism, with junior hospital doctors routinely presenting for work even when they were unwell. With mandated sick leave for COVID-19 and isolation leave for close contacts of confirmed cases, more doctors were made available as ‘reserves’ to plug any gaps in rotas. As a result, interviewees felt ‘able to be unwell’. The level of cover available ensured that: ‘If people did have to self-isolate for a few days...we had extra staff to step in’ (P48).

Improved morale and relationships

Interviewees also connected the availability of additional medical staff to their experience of more manageable workloads, improved interprofessional relationships

and increased workplace morale during the first wave of COVID-19.

There’s always at least three or four consultants around. It makes them more approachable.... Without having to go running around, looking for them.... when we were referring...they weren’t up the walls as well.... the workload was just much easier.... It made them more approachable.... it’s a lot more harmonious when you have...one or two extra bodies. (P25)

I think the morale was really good. Everything was well staffed. There was a pretty good...sense of...collective effort among everyone in the hospital, which I thought was really great.... People were relaxed, and people weren’t overworked. And that was good for kind of interdisciplinary relationships in the hospital, which was...refreshing. (P47)

Workloads for senior and junior hospital doctors seemed more manageable during the first wave, with interviewees attributing this to sufficient staffing levels. For interviewees, this resulted in a perception of consultants as ‘more approachable’, and medical staff in general as more relaxed, thereby improving workplace morale. ‘Extra bodies’ on the hospital floor led to more amicable relations between junior and senior doctors, improved morale and better interdisciplinary relationships; ‘...even if you were talking to people from other specialties, everyone was very helpful...’ (P6). Despite the challenges of providing acute care during the first wave of the COVID-19 pandemic, the impact of increased medical staffing on doctors’ workloads meant that workplace relationships and morale were improved.

Increased availability of clinical support

For these junior hospital doctors, the greater presence and availability of consultants on the hospital floor made it easier to access senior decision makers when needed. Interviewees felt they had a greater level of clinical support and that this helped to improve efficiency at work.

...if you think about the process of seeing a patient ...if a senior doctor...sees a patient and makes a decision, that’s pretty much done.... if a more junior doctor...sees a patient, they need to work the patient, but they then need to go and seek advice or opinion from a senior doctor. It’s a slower process, and the more senior decision makers you have on the floor, the quicker you can make decisions. (P48)

...if the Regs [Registrars] are busy, you need somebody more senior to talk to.... having the extra seniority around is brilliant.... it did make things a bit more streamlined...we could get people in and out nice and quickly. (P25)

Contrasting their COVID-19 experience with pre-COVID working conditions, interviewees noted how the presence of more medical staff on the hospital floor



ensured that they had ‘...more support on the ground...’ (P12). The ease of access to clinical support from senior doctors was viewed as an important resource for interviewees, especially when deciding which issues to escalate while on call. Interviewees also described how better access to senior doctors during COVID-19 resulted in quicker decision-making and an ability to provide more ‘streamlined’ care to patients.

It took a pandemic to make change happen

Although COVID-19 brought uncertainty, anxiety and heightened health and safety risks to junior hospital doctors (as well as to other frontline workers), it also brought adequate staffing levels, more manageable workloads, better relationships and improved morale. Interviewees felt that during the first wave of COVID-19 in Ireland, they were adequately resourced to do their job due primarily to increased staffing. Interviewees were left wondering why it had taken a pandemic to bring about such positive change to their working conditions.

...if it [increased staffing] was possible then [April 2020], why wouldn't it be possible in October/November 2019 where you're stretching three people to the absolute end of their capacity... it used to always occur to me that it would take something horrific to happen to make things better. (P1)

...it shouldn't have taken a pandemic to improve and revolutionise the healthcare system. (P2)

...we've been given a taste of what it's like to be treated well... (P24)

Interviewees hoped the pandemic might represent ‘a watershed moment’ (P48) in terms of formalising and retaining some of the positive changes which occurred during the first wave. Their experience during COVID-19 had illustrated that the Irish health system *could* provide more adequate staffing and working conditions; ‘...the way it was staffed during COVID is the way it should be staffed in real life’ (P10).

However, at the time of interviews (June to July 2020), interviewees were fearful that working conditions and staffing levels were ‘slipping back’ (P48) to pre-COVID levels. Interviewees noted that just as non-COVID care demands began to rise in late summer 2020, staffing levels began to decrease.

It's getting really busy again from the non-COVID side.... It's really hard to kind of keep going and going back to normal. (P10)

...no matter how hard you work, no matter how quickly...how efficiently...it's just not really possible to deliver the same level of care with less than half the number of staff. (P48)

For the junior hospital doctors interviewed, their experiences of working during COVID-19 underscored the point that their working conditions: ‘...all stem from staffing...’ (P44). The fear for interviewees going forward

is the possibility of a return to pre-COVID levels of staffing and pre-COVID levels of workload and strain.

DISCUSSION

Extending previous HDRM research on the working lives of hospital doctors in Ireland^{6 11-13} and recent international literature on healthcare workers' experience of COVID-19,^{8 23} this article raises a simple but important point: staffing matters. The findings illustrate how COVID-related changes at hospital level had the unintended consequence of enhancing the work environments of interviewees. Paradoxically, interviewees contrasted the ‘crisis’ levels of staffing and challenges of work pre-COVID with the enhanced levels of staffing and more positive environments experienced during the first wave of the pandemic. The findings detail the myriad, inter-related ways in which adequate medical staffing positively shaped interviewees' experiences of work during the first wave of COVID-19 in Ireland. These included facilitating sick leave and call cover, improved morale and relationships and increased availability of clinical support. These findings add to previously published HDRM research which considers the impact of non-staffing factors on interviewees' working lives and well-being during wave 1 of COVID-19.^{43 44}

COVID-19 exposed a range of weaknesses in health systems worldwide, most notably workforce shortages.^{1 8} The threat that the first wave of COVID-19 would overwhelm the Irish health system necessitated a timely introduction of public health virus suppression measures as well as a reconfiguration of acute medical care.^{9 18-21} We expected the pandemic and health system reconfiguration to cause further deterioration to the working conditions of Ireland's junior hospital doctors. However, rather than exacerbating workforce shortages, interviewees spoke about adequate staffing and an enhanced experience of work, despite working on the frontline of a global pandemic. These findings align with a qualitative study of nurses and doctors in China which reported improved team relationships and morale during COVID-19.²³ However, the findings contrast sharply to our pre-pandemic research on the working lives of hospital doctors in Ireland, conducted in 2018 and 2019, which highlighted understaffing, extreme workloads, presenteeism and work-life conflict.^{6 12 13} The article also advances the findings of Byrne *et al*¹¹ in illustrating how medical staffing levels can shape the nature of interactions with medical colleagues and the availability of clinical support.

The findings demonstrate why staffing matters for junior hospital doctors. Whether the result of redeployment or recruitment, additional staffing levels facilitated uptake of sick leave and improvements to workplace relationships, collaboration, access to clinical support and workplace morale. These are working conditions critical to hospital doctors' quality of working life. They are also conditions which enable doctors to ‘maximise’

their ability to provide a high standard of care over a long period of time.⁴ Extending literature on workloads and psychological strain,^{6 23 45} this article demonstrates how medical staffing levels have implications for interpersonal environments, organisational cultures and the sustainability of medical work practices and workforces. Staffing levels represent a, if not *the*, key work resource as they powerfully shape the impact of work demands on doctors' working lives and well-being (ie, workloads, job quality and work-life balance).^{6 12 16}

In light of the findings, it is worthwhile reflecting on approaches that support sustainable healthcare staffing. In their landmark study, Aiken *et al*⁴⁶ found that nurse staffing levels affect both patient outcomes and nurse burnout and job satisfaction, and provided a basis for the introduction of recommended staffing levels in nursing. The development of policies for, and approaches to, determining nurse staffing levels has resulted in a range of nationally or locally mandated nurse to patient ratios in health systems across the UK and Europe.^{47 48} Despite evidence that medical staffing levels also matter in terms of patient outcomes⁴⁹ and working conditions,^{6 11–13} minimal attention has been paid to developing safe and appropriate staffing levels for doctors. A 2018 report by the Royal College of Physicians emphasised this point in developing the first recommendations for safe medical staffing levels in UK hospitals.⁵⁰ Setting standards for the medical staffing needed to ensure timely and effective care, this report highlights that the National Institute for Health and Care Excellence's definition of safe nursing care is 'equally applicable to safe medical care'. Our findings add contextual data to this body of work which highlights the importance of enhanced medical staffing levels to ensure quality training time and working conditions for junior hospital doctors, as well as a high standard of care for patients.^{50–52} The nature and impact of healthcare workers' working conditions represent a crucial area of health research, especially when considering the recognised links between staff well-being and the safety and quality of healthcare delivery.⁵³

Despite being a challenging and traumatic time for healthcare workers, patients and families; in forcing the healthcare systems and services to reconfigure, COVID-19 represents a unique learning opportunity for health system improvement.²² Our article shows the importance of engaging with the experiences of frontline health workers.⁷ It is only by listening to, and hearing,^{4 5} the experiences of those at the 'sharp end'⁵ of COVID-19 that we can identify sources of workplace strain and develop appropriate support and strategies to overcome them.^{8 25}

Doctors and healthcare staff, who represent the 'backbone' of healthcare systems,²² are already exhausted from managing COVID-19 throughout 2020 and 2021.⁵⁴ Enhanced staffing capacity is required to enable healthcare workers to shoulder the weight of extended COVID-19 care demands. Some of the measures available in wave 1 (eg, the postponement of non-urgent care) are no longer acceptable, or optimal, considering the impact

of delayed care on waiting lists.⁵⁵ Surge capacity strategies temporarily addressed staffing deficiencies^{1 19 21} in the Irish health system, and improved the working conditions of interviewees. However, future workforce planning and health system resilience will require staffing mechanisms that monitor and respond to surges which compromise the safety of patients and staff.^{50 56} Interviewees warned that a return to 'normality' (ie, understaffing) could undo the improvements to working conditions experienced during the first wave of COVID-19, at a time when service demands, and work strain, are increasing.

The findings advance our understanding of how the first wave of COVID-19 impacted, and improved, the work experiences of junior hospital doctors in Ireland. However, our study has several limitations; due to the qualitative research design and sampling criteria there is potential for self-selection bias and the findings cannot be deemed as representative of all junior hospital doctors' experiences. As the article focuses on the working conditions of hospital doctors, it does not address the experience of specific specialties, or other healthcare workers, for example, nurses. Interviews took place just after the first COVID-19 wave in Ireland, which aids recall but means interviewees did not have experience of balancing COVID-19 and non-urgent care demands. Further research is required to explore the experiences of junior hospital doctors in later waves of the COVID-19 pandemic.

In a context of continued COVID-19 pressures, international staffing shortages, ever expanding waiting lists and evidence of burnout, identifying support for the long-term sustainability of medical staffing is key. In this article, the work-related benefits of increased medical staffing are made clear. Adequate medical staffing can improve hospital doctors' experience of work, and therefore must play a significant role in strategies which seek to address medical workforce retention. Health systems are only as resilient and flexible as the people staffing them are enabled to be.

Twitter John-Paul Byrne @jpb Byrne7

Acknowledgements The authors would like to thank the funders, all the doctors who took part in the interviews for this study and the QDA training for their expert transcription of the interviews.

Contributors J-PB designed the research, conducted the interviews and led the analysis and writing of this article. NH obtained funding for the study, designed the research, conducted the interviews and undertook the analysis. JC designed the research, conducted the interviews and undertook the analysis. AM, AMM and RWC contributed to revising the article and the final submission. All authors have read and agreed to the published version of the manuscript.

Funding This research was funded by the Health Research Board (HRB) in Ireland via an Emerging Investigator Award (EIA-2017-022) to NH.

Disclaimer The funders had no role in the design of the study, or in the collection, analysis and interpretation of data, or in writing the manuscript.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not required.

Ethics approval Ethical approval for this study was granted by the Royal College of Physicians of Ireland (RCPI) Research Ethics Committee (RCPI RECSAF 108).

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. The data sets generated and/or analysed during the current study are not publicly available due to privacy/confidentiality concerns. Reasonable requests for access can be made to the corresponding author who will consider any such requests in collaboration with the RCPI Research Ethics Committee.

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 iD

John-Paul Byrne <http://orcid.org/0000-0002-9961-8710>

REFERENCES

- 1 Eurohealth. COVID-19 health system response 2020.
- 2 Bohmer R, Shand J, Allwood D. Learning systems: managing uncertainty in the new normal of Covid-19. *NEJM Catalyst* 2020.
- 3 de Sutter A, Llor C, Maier M, *et al*. Family medicine in times of 'COVID-19': A generalists' voice. *Eur J Gen Pract* 2020;26:58–60.
- 4 Shanafelt T, Ripp J, Trockel M. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *JAMA* 2020;323:2133–4.
- 5 Dixon-Woods M, Baker R, Charles K, *et al*. Culture and behaviour in the English National health service: overview of lessons from a large multimethod study. *BMJ Qual Saf* 2014;23:106–15.
- 6 Humphries N, McDermott AM, Conway E, *et al*. 'Everything was just getting worse and worse': deteriorating job quality as a driver of doctor emigration from Ireland. *Hum Resour Health* 2019;17:97.
- 7 Vindrola-Padros C, Chisnall G, Cooper S, *et al*. Carrying out rapid qualitative research during a pandemic: emerging lessons from COVID-19. *Qual Health Res* 2020;30:2192–204.
- 8 Vindrola-Padros C, Andrews L, Dowrick A, *et al*. Perceptions and experiences of healthcare workers during the COVID-19 pandemic in the UK. *BMJ Open* 2020;10:e040503.
- 9 OECD. OECD indicators: health at a glance 2019. Paris 2019.
- 10 Walsh B, Keegan C, Brick A. How is Ireland's healthcare system coping with coronavirus? 2020. Available: <https://www.coronavirusandtheeconomy.com/question/how-irelands-healthcare-system-coping-coronavirus>
- 11 Byrne J-P, Conway E, McDermott AM, *et al*. How the organisation of medical work shapes the everyday work experiences underpinning doctor migration trends: the case of Irish-trained emigrant doctors in Australia. *Health Policy* 2021;125:467–73.
- 12 Humphries N, McDermott AM, Creese J, *et al*. Hospital doctors in Ireland and the struggle for work-life balance. *Eur J Public Health* 2020;30:iv32–5.
- 13 Byrne JP, Conway E, McDermott AM. Between Balance and Burnout: Contrasting the Working-Time Conditions of Irish-Trained Hospital Doctors in Ireland and Australia. In: Montgomery A, van der Doef M, Panagopoulou E, eds. *Connecting healthcare worker well-being, patient safety and organisational change: aligning perspectives on health, safety and well-being*. Switzerland: Springer Nature, 2020.
- 14 Hayes B, Prihodova L, Walsh G, *et al*. Doctors don't Do-little: a national cross-sectional study of workplace well-being of hospital doctors in Ireland. *BMJ Open* 2019;9:e025433.
- 15 Humphries N, Crowe S, McDermott C, *et al*. The consequences of Ireland's culture of medical migration. *Hum Resour Health* 2017;15:87.
- 16 Brugha R, Clarke N, Hendrick L, *et al*. Doctor retention: a cross-sectional study of how Ireland has been losing the battle. *Int J Health Policy Manag* 2020.
- 17 Turner B. Putting Ireland's health spending into perspective. *The Lancet* 2018;391:833–4.
- 18 Burke S, Thomas S, Barry S, *et al*. Indicators of health system coverage and activity in Ireland during the economic crisis 2008–2014 - from 'more with less' to 'less with less'. *Health Policy* 2014;117:275–8.
- 19 Kennelly B, O'Callaghan M, Coughlan D, *et al*. The COVID-19 pandemic in Ireland: an overview of the health service and economic policy response. *Health Policy Technol* 2020;9:419–29.
- 20 Government of Ireland. Ireland's National Action Plan in response to COVID-19 (Coronavirus);2020.
- 21 Burke S, Barry S, Thomas S. COVID-19 health system response monitor: Ireland country report Brussels: European Observatory on health systems and policies, 2020. Available: <https://www.covid19healthsystem.org/countries/ireland/countrypage.aspx>
- 22 Bourgeault IL, Maier CB, Dieleman M, *et al*. The COVID-19 pandemic presents an opportunity to develop more sustainable health workforces. *Hum Resour Health* 2020;18:83.
- 23 Liu Q, Luo D, Haase JE, *et al*. The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. *Lancet Glob Health* 2020;8:e790–8.
- 24 Berger D, 2020. Available: <https://youarelobbyslud.medium.com/dont-let-them-gag-doctors-we-are-your-canaries-fd7e20ac0fd>.
- 25 Swaithe L, Dziedzic K, Sharp CA, *et al*. Context, context, context: how has covid-19 changed implementation globally and how can we 'lock in' learning? *Rheumatology* 2020;59:1804–7.
- 26 National doctors training and planning. Report of the NDTP Working group on doctors not in training: optimising the Irish medical workforce. Dublin 2019.
- 27 Department of Health. Health in Ireland: key trends 2019. Dublin 2020.
- 28 Morris R, Smith M. Demand for medical consultants and specialists to 2028 and the training pipeline to meet demand: a high level Stakeholder informed analysis. Dublin 2020.
- 29 Humphries N, Crowe S, Brugha R. Failing to retain a new generation of doctors: qualitative insights from a high-income country. *BMC Health Serv Res* 2018;18:144.
- 30 Humphries N, Connell J, Negin J, *et al*. Tracking the leavers: towards a better understanding of doctor migration from Ireland to Australia 2008–2018. *Hum Resour Health* 2019;17:36.
- 31 Spooner S, Pearson E, Gibson J, *et al*. How do workplaces, working practices and colleagues affect UK doctors' career decisions? A qualitative study of junior doctors' career decision making in the UK. *BMJ Open* 2017;7:e018462.
- 32 Petrie K, Crawford J, LaMontagne AD, *et al*. Working hours, common mental disorder and suicidal ideation among junior doctors in Australia: a cross-sectional survey. *BMJ Open* 2020;10:e033525.
- 33 Nguyen LH, Drew DA, Graham MS, *et al*. Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study. *Lancet Public Health* 2020;5:e475–83.
- 34 Shah ASV, Wood R, Gribben C, *et al*. Risk of hospital admission with coronavirus disease 2019 in healthcare workers and their households: nationwide linkage cohort study. *BMJ* 2020;371:m3582.
- 35 Shields A, Faustini SE, Perez-Toledo M, *et al*. SARS-CoV-2 seroprevalence and asymptomatic viral carriage in healthcare workers: a cross-sectional study. *Thorax* 2020;75:1089–94.
- 36 Joseph AO, Joseph JP, Gahir J, *et al*. Re-Organising junior doctors during the COVID-19 outbreak: a single centre experience in the United Kingdom. *Int J Health Policy Manag* 2020;9:459–60.
- 37 Humphries N. The Hospital Doctor Retention & Motivation (HDRM) Project Royal College of Physicians of Ireland (RCPI): Health Research Board (HRB), 2020. Available: <https://www.rcpi.ie/hdrm/>
- 38 Bradbury-Jones C, Breckenridge J, Clark MT, *et al*. The state of qualitative research in health and social science literature: a focused mapping review and synthesis. *Int J Soc Res Methodol* 2017;20:627–45.
- 39 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–57.
- 40 Tavory I, Timmermans S. *Abductive analysis: theorizing qualitative research*. Chicago: University of Chicago Press, 2014.
- 41 Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
- 42 Fereday J, Muir-Cochrane E. Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development. *Int J Qual Methods* 2006;5:80–92.
- 43 Humphries N, Creese J, Byrne J-P, *et al*. COVID-19 and doctor emigration: the case of Ireland. *Hum Resour Health* 2021;19:29.
- 44 Creese J, Byrne J-P, Conway E, *et al*. "We All Really Need to just Take a Breath": Composite Narratives of Hospital Doctors' Well-Being during the COVID-19 Pandemic. *Int J Environ Res Public Health* 2021;18:2051.
- 45 Lai J, Ma S, Wang Y, *et al*. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open* 2020;3:e203976-e:203976.
- 46 Aiken LH, Clarke SP, Sloane DM, *et al*. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA* 2002;288:1987–93.

- 47 Jones A, Whyley H, Doyle J, *et al.* Development of approaches and legislation to optimise nurse staffing levels. *Nurs Stand* 2018;33:27–31.
- 48 Zander-Jentsch B, Wagner F, Rzayeva N. Chapter 4: Germany. In: Rafferty AM, Reinhard BB, Zander-Jentsch W, eds. *Strengthening health systems through nursing: evidence from 14 European countries health policy series No.52 EU health Observatory*, 2019.
- 49 Griffiths P, Ball J, Murrells T, *et al.* Registered nurse, healthcare support worker, medical staffing levels and mortality in English Hospital trusts: a cross-sectional study. *BMJ Open* 2016;6:e008751.
- 50 Royal College of physicians. *Guidance on safe medical staffing: report of a working Party*. London, 2018.
- 51 National Task force on medical staffing. *Report of the National Task force on medical staffing*. Dublin, 2003.
- 52 Department of Health. *Strategic review of medical training and career structure: tenth progress report*. Dublin, 2019.
- 53 Montgomery A, van der Doef M, Panagopoulou E, eds. *Connecting Healthcare Worker Well-Being, Patient Safety and Organisational Change: The Triple Challenge*. Springer Nature Switzerland AG 2020: Springer, Cham, 2020.
- 54 World Health Organisation. COVID-19: taking stock and moving forward together: statement by the who regional director for Europe at an emergency meeting of ministers of health from the who European region on COVID-19 projections for the winter season, 2020. Available: https://www.euro.who.int/en/about-us/regional-director/statements-and-speeches/2020/statement-covid-19-taking-stock-and-moving-forward-together?utm_source=WHO%2FEurope+mailing+list&utm_campaign=13a1ff7cec-News_highlights_January_2018_COPY_01&utm_medium=email&utm_term=0_60241f4736-13a1ff7cec-110538917
- 55 Power J. Over 830,000 patients now in hospital waiting Lists. *Irish Times* 2021.
- 56 Thomas S, Sagan A, Larkin J. *Strengthening health systems resilience: key concepts and strategies*. Copenhagen: European Observatory on Health Systems and Policies, 2020.