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**'...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**

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**TITLE**

‘...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

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## 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. Pre-pandemic, the working conditions of hospital doctors in Ireland were characterised by understaffing, overload, long hours, and work-life conflict. We explore how COVID-19-related restructuring and reconfiguration affected the working conditions of junior hospital doctors during the first wave of COVID-19 in Ireland.

### Methods & Analysis

Using a qualitative study design, the article draws on semi-structured interviews with 30 junior doctors. Data were analysed using inductive and deductive coding techniques to identify key themes reflecting the experiences of working in Irish hospitals during the first wave of COVID-19.

### Results

Rather than cause further strain, junior doctors described how COVID-19 prompted changes at the hospital level that *enhanced* their work environments. In particular, interviewees felt there were more doctors on the hospital floor, which had positive implications for a range of factors important to their experience of work, including the capacity to take sick leave, improved workplace relationships, enhanced collective workplace morale, improved access to clinical support, and faster decision-making. Interviewees also cautioned against rolling back these changes and returning to pre-pandemic medical staffing levels, which had negatively impacted their working conditions and wellbeing.

### Conclusions

The pandemic response has illustrated how junior doctors' working conditions can be improved, via the pervasive work-related benefits of enhanced medical staffing. Perhaps it is time to consider medical staffing standards as a policy lever to enhance medical workforce retention. In a global context of sustained COVID-19 demands, pressures from delayed care, and international staffing

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3 shortages, understanding frontline experiences and identifying strategies to improve them are vital  
4 to improved retention and the development of sustainable work practices.  
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## 9 **STRENGTHS & LIMITATIONS**

- 10  
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12  
13 • One of the first qualitative studies exploring the frontline experience of junior doctors in  
14 Irish hospitals during the first wave of the COVID-19 pandemic in Ireland.
- 15  
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17 • Representing the majority of the medical workforce in Ireland, junior doctors' experiences  
18 represent a key perspective in learning from the COVID-19 experience and informing future  
19 responses.  
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- 22 • Learning from the context-specific experiences of those on frontline can support the  
23 development of sustainable work practices for hospital doctors facing future COVID-19  
24 waves and the resumption of chronic and non-urgent care.  
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26
- 27 • This frontline perspective is key to understanding how the unanticipated shock of the  
28 pandemic played out on the hospital floor and what lessons can be gleamed from their  
29 experience.  
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- 32 • Interviews took place just after the first COVID-19 wave in Ireland which aids recall but  
33 means interviewees didn't yet have experience of balancing COVID-19 and non-urgent care  
34 demands.  
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- 37 • As the article focuses on the working conditions of hospital doctors, it does not address the  
38 experience of specific specialties, or other healthcare workers e.g. nurses.  
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## 43 **INTRODUCTION**

44  
45 The COVID-19 pandemic has fundamentally changed the context and nature of healthcare delivery  
46 globally. Healthcare systems have adapted to meet the urgent care needs of COVID-19 patients  
47 while striving to maintain non-COVID services and protect patients and staff from infection (1, 2).  
48 This has brought significant transformations to the hospital work environment. In an acute care  
49 context, where working conditions directly impact the safety and well-being of staff and patients  
50 alike, it is vital that we listen to, and understand, the experiences and concerns of frontline  
51 healthcare workers (3, 4). The frontline perspective must be heard if health systems are to  
52 understand how this unanticipated shock played out on the hospital floor; to ascertain what lessons  
53 can be gleamed from the pandemic, and what resources are required to ensure the continued  
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3 provision of health services (5, 6). The need to engage with frontline health workers is even more  
4 pertinent when we consider that, in Ireland, frontline staff were already under strain from the  
5 demands of working within a health system with significant resource constraints.  
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8 Prior to COVID-19, working conditions for hospital doctors in the Irish health system were difficult  
9 and deteriorating. To illustrate the infrastructural context; in 2017, Ireland had fewer doctors (3.1)  
10 and hospital beds (3) per 1,000 population than the OECD average, and the highest occupancy rate  
11 (95%) of in-patient hospital beds in the OECD (7). Additionally, in early 2020, the Irish public health  
12 system had 5 intensive care beds per 100,000 population compared to an EU average of 14.5 (8).  
13 Research has shown that, pre-pandemic, hospital doctors in Ireland struggled with understaffing,  
14 work overload, long and unpredictable hours, and poor work-life balance (9-12). These extreme  
15 working conditions drove high rates of burnout, emigration, and medical workforce attrition (13-15).  
16 These findings reflect the experience of working in a health system under strain which – due to  
17 historic underinvestment, austerity-related cuts, and infrastructural deficits – was ill-equipped to  
18 cope with the sudden and increased demands of COVID-19 (16, 17). It was against this backdrop that  
19 the Irish health system, and its frontline staff, responded to the COVID-19 threat. Like many  
20 countries around the world, the Irish response involved a combination of public health measures,  
21 hospital service restructuring, and a reconfiguration of the health workforce.  
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33 To help suppress the transmission of COVID-19 and diminish the burden placed on hospitals, the  
34 Irish government employed a range of public health measures. These included: the mandatory  
35 closure of non-essential businesses; asking all workers to work from home where possible; banning  
36 of large gatherings; advising over 70's and medically-vulnerable individuals to 'cocoon' at home; and  
37 introducing nationwide restrictions on travel and movement during the peaks of April, October and  
38 December 2020 (18). To meet anticipated demands in acute care, hospital services were  
39 restructured primarily through the closure of out-patient clinics and cancellation of elective  
40 procedures, the acquiring of private hospital capacity, and the rapid development of COVID and non-  
41 COVID care pathways (19). The COVID-19 response also saw the introduction of a range of health  
42 workforce and surge capacity strategies including: the redeployment of hospital doctors, the early  
43 entry of interns into the workforce, and a campaign to recruit additional healthcare workers (e.g. 'Be  
44 on Call for Ireland') (18-20).  
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55 This reconfiguration of hospital services and doctors to meet the immediate needs of COVID-19  
56 patients was an acknowledgement of the pandemic threat. It was driven by the need to ensure  
57 sufficient numbers of staff, beds, personal protective equipment (PPE), masks, and ventilators to  
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3 protect staff and provide adequate and safe care during the pandemic. However, as the impact of  
4 the COVID-19 pandemic extends into 2021, a longer-term approach is required. It is critical we do  
5 not lose sight of the experiences and concerns of frontline staff who are the 'backbone' of health  
6 systems, and have been coping with colossal and prolonged pandemic-related change to their  
7 working conditions and lives (21). For hospital doctors, the pandemic, and subsequent restructuring  
8 of services and reconfiguration of workforces, has brought sudden redeployment, PPE use, high  
9 infection risk, and new methods, environments and stressors of practice (22). As the 'canaries' in the  
10 COVID-coalmine (23), understanding the impact of, and learning from, these transformed working  
11 conditions is indispensable to the ongoing pandemic response and future health service strategies  
12 (1, 24). In this article we explore the experience of junior hospital doctors on the frontline of COVID-  
13 19.

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23 'Junior' hospital doctor is a term which refers to all doctors who have completed basic medical  
24 training but have not reached consultant or specialist grade. In the Irish health system these doctors  
25 are referred to as non-consultant hospital doctors (NCHDs) which includes hospital doctors at all  
26 stages of postgraduate medical training (i.e. intern to specialist registrar), as well as NCHDs not on  
27 postgraduate training schemes who are typically employed on 6-12-month contracts, or as agency  
28 locums (25). We focus on the experience of these doctors as they comprise the majority of the  
29 medical workforce in Ireland (68%) and, to a greater extent than hospitals in other countries, Irish  
30 hospitals rely heavily on the work of these doctors to deliver care (25, 26). Previous research has  
31 shown that these junior doctors have somewhat different expectations of their medical careers  
32 when compared with earlier generations (27), and are perhaps more likely to emigrate to achieve  
33 working life goals of shorter working hours and greater work-life balance (28). Research from the UK  
34 and Australia has also highlighted the powerful impact of junior doctors' work experiences,  
35 illustrating how perceptions of work environments can influence career decisions (29), and the  
36 detrimental impact extended working hours can have on mental health (30).

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39 With regards to the pandemic response in Ireland, junior hospital doctors were a key part of medical  
40 workforce surge strategies (e.g. accelerated graduation of medical students into intern roles) and  
41 reconfigured COVID and non-COVID care pathways. They staffed patient-facing roles on the medical  
42 frontline during COVID-19 and therefore had high risks of COVID-19 infection (31), especially those  
43 working in acute receiving specialties (32, 33). In sum, the working lives of junior hospital doctors'  
44 were profoundly impacted by the COVID-19 pandemic (34). In this article we explore how the  
45 pandemic and the health system response affected the working conditions of junior hospital doctors  
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3 during the first wave of COVID-19 in Ireland. The article considers how the insights provided by  
4 junior hospital doctors might be used to enhance working conditions and improve hospital doctor  
5 retention in the Irish health system.  
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## 8 9 **METHODS**

### 10 11 **Study design and participants**

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13 This study is part of a wider research project, the *Hospital Doctor Retention and Motivation* (HDRM)  
14 project, which seeks to inform and improve doctor retention policy and practice in the Irish health  
15 system (35). For this article, we conducted a qualitative study which used semi-structured interviews  
16 to explore the experiences of junior hospital doctors working in Irish hospitals during the first wave  
17 of the COVID-19 pandemic in spring 2020. The Consolidated criteria for Reporting Qualitative  
18 (COREQ) research checklist guides the reporting of this study (36).  
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26 Using purposive and snowball sampling techniques, a call for interviewees was launched on 10 June  
27 2020 via the HDRM project website and social media. 60 hospital doctors contacted the HDRM team  
28 and a total of 48 one-on-one, semi-structured interviews were conducted. Prior to each interview,  
29 doctors were provided with an information leaflet which outlined the goals of the HDRM project, the  
30 rationale for this piece of research, what participation involved, and data processing details. A  
31 digitally-signed informed consent form was completed before each interview.  
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### 39 **Data collection**

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41 The interviewers comprised the principal investigator who is a reader in health systems research  
42 (NH), and two postdoctoral researchers with backgrounds in sociology (JPB) and social anthropology  
43 (JC). All interviewers hold PhDs and are experienced in qualitative methods and data collection.  
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48 Due to pandemic-related social distancing measures and travel restrictions, semi-structured one-on-  
49 one interviews were conducted via Zoom or telephone – whichever was preferable for the  
50 interviewee. Interviews were conducted by the project team (NH, JPB, JC) between June 12<sup>th</sup> and  
51 July 10<sup>th</sup>, 2020 - a period between two COVID-19 peaks in Ireland in early April and mid-October,  
52 2020 (18). Interviews lasted an average of 45 minutes with a range of 23 to 93 minutes. The  
53 interview topic guide was organised around seven themes: demographic information, working as a  
54 doctor (before and during COVID), the experience of work during the pandemic, the impact of the  
55 pandemic on wellbeing, doctors who returned to Ireland to work during the pandemic for COVID-19  
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(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 doctors interviewed among the 48 interviewees. As set out in the introduction, 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. Table 1 profiles the interviewees included in this article. Interviews were audio-recorded and transcribed verbatim by a third-party. Transcripts were de-identified by interviewers and all interviewees were offered the opportunity to review and modify their transcripts for corrections prior to analysis. The interviewers (NH, JPB, JC) had no prior professional relationship with the 30 interviewees. Data were stored, organised, and analysed using MaxQDA software (V20.1.1).

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|---------------|---|----------|--------------------|-----------|----------|
| <b>Gender</b> | Female                                  | 22 (73%) | <b>Degree Year</b> | 2016-2019 | 20 (66%) |
|               | Male                                    | 8 (27%)  |                    | 2011-2015 | 8 (27%)  |
|               |   |          |                    | 2006-2010 | 2 (7%)   |
| <b>Grade</b>  | Specialist Registrar (SpR) <sup>1</sup> | 8 (27%)  |                    |           |          |
|               | Registrar <sup>2</sup>                  | 3 (10%)  |                    |           |          |
|               | Senior House Officer (SHO) <sup>3</sup> | 13 (43%) |                    |           |          |
|               | Intern <sup>4</sup>                     | 6 (20%)  |                    |           |          |

<sup>1</sup> Advanced higher specialty trainee doctor; <sup>2</sup> experienced specialty (trainee or equivalent) doctor; <sup>3</sup> basic specialty trainee (or equivalent) doctor; <sup>4</sup> new graduate doctor.

## Data analysis

Informed by an abductive approach (37), thematic analysis was conducted (38) using a combination of inductive and deductive coding techniques (39). NH and JPB conducted primary coding based on the topic guide themes. JC reviewed samples of this coding process. Sub-coding of larger codes (e.g. working during COVID-19) was undertaken by JPB and JC. A project review meeting was conducted prior to, and after, each coding stage. For this article, JPB inductively analysed the data indexed to the primary codes of “working during COVID” and “staffing and COVID”. In line with an abductive approach (37), a key surprise emerged in how junior doctors 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, JPB revisited the codes to inductively explore the junior doctor dataset for experiences which may reinforce or contradict these themes.

## RESULTS

*...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).*

This detailed account represents an archetypal experience for the junior 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 junior doctors when compared to pre-COVID experiences (e.g. winter 2019). Expanding on the narrative above, we discuss junior doctors' experience of increased medical staffing within hospitals re-structured in response to COVID, and the positive impact this had on their experience of work.

### 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 via 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 system, junior doctors commented on how: i) there were simply more doctors around; ii) this

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3 was an unfamiliar experience, and; iii) the medical staffing levels during COVID-19 should have been  
4 in place long before COVID-19; ‘...hospitals are probably more properly staffed than they ever have  
5 been’ (P12). For these junior doctors, sufficient staffing during COVID-19 led to more manageable  
6 workloads and more predictable working hours during the first wave of the pandemic in Ireland.  
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### 10 **How more doctors improved the work experience**

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13 Interviewees described how their working conditions had improved as a result of increased medical  
14 staffing during COVID19. Increased staffing made a significant difference to their work experience as  
15 it: (i) facilitated sick leave and call cover, (ii) improved morale and relationships, and (iii) increased  
16 availability of clinical support.  
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#### 20 (i) Facilitated sick leave and call cover

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23 Working on the frontline, junior doctors were at a high risk of infection from COVID-19. As a result,  
24 medical teams constantly had to be re-configured as doctors self-isolated or quarantined when they  
25 came into contact with the virus. Additional staffing capacity was provided in anticipation of doctors  
26 being absent due to COVID-19 protocols. Increased medical staffing levels provided teams with the  
27 flexibility to respond to sudden and unpredictable rota gaps as ‘reserves’ were used to cover shifts.  
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35 *...there were way more of us.... It's actually really nice to be adequately staffed. There was sick*  
36 *cover and cover if you couldn't do your call. You were encouraged not to come in if you were*  
37 *unwell.... It was really nice.... before that, if you were sick or couldn't come in, you were leaving*  
38 *people really stuck...you'd feel really bad. But it wasn't like that during COVID.... we just had*  
39 *enough staff.... we had eight reserves for the day job.... we never have reserves.... that was to*  
40 *facilitate, I suppose, being able to be unwell... (P24).*  
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44 With additional staff available, junior doctors felt it was ‘...easier to take any [sick] leave’ (P47). This  
45 contrasted with interviewees’ previous experiences where taking sick leave meant leaving  
46 colleagues ‘really stuck’. Pre-pandemic, a desire not to leave your team short-staffed encouraged  
47 presenteeism, with junior doctors routinely presenting for work even when they were unwell. With  
48 mandated sick leave for COVID-19 and isolation leave for close contacts of confirmed cases, more  
49 staff were made available as ‘reserves’ to plug any gaps in rotas. As a result, interviewees felt ‘able  
50 to be unwell’. The level of cover available ensured that; ‘If people did have to self-isolate for a few  
51 days...we had extra staff to step in’ (P48).  
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4 (ii) Improved morale and relationships  
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6 Interviewees also connected the availability of additional medical staff to their experience of more  
7 manageable workloads, improved inter-professional relationships and workplace morale during the  
8 first wave of COVID19.  
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13 *There's always at least three or four consultants around. It makes them more approachable....*  
14 *Without having to go running around, looking for them.... when we were referring...they*  
15 *weren't up the walls as well.... the workload was just much easier.... It made them more*  
16 *approachable.... it's a lot more harmonious when you have...one or two extra bodies (P25).*  
17

18  
19 *I think the morale was really good. Everything was well staffed. There was a pretty*  
20 *good...sense of...collective effort among everyone in the hospital, which I thought was really*  
21 *great.... People were relaxed, and people weren't overworked. And that was good for kind of*  
22 *interdisciplinary relationships in the hospital, which was...refreshing (P47).*  
23

24 Workloads for senior and junior hospital doctors seemed more manageable during the first wave,  
25 with interviewees attributing this to sufficient staffing levels. For interviewees, this resulted in a  
26 perception of consultants as 'more approachable', and medical staff in general as more relaxed,  
27 thereby improving workplace morale. 'Extra bodies' on the hospital floor led to more amicable  
28 relations between junior and senior doctors, improved morale, and better interdisciplinary  
29 relationships; '...even if you were talking to people from other specialties, everyone was very  
30 helpful...' (P6). Despite the challenges of providing acute care during the first wave of the COVID-19  
31 pandemic, the impact of increased medical staffing on doctors' workloads meant that workplace  
32 relationships and morale were improved.  
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42 (iii) Increased availability of clinical support  
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44 For these junior doctors, the greater presence and availability of consultants on the hospital floor  
45 made it easier to access senior decision makers when needed. Interviewees felt they had a greater  
46 level of clinical support and that this helped to improve their efficiency at work.  
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52 *...if you think about the process of seeing a patient...if a senior doctor...sees a patient and*  
53 *makes a decision, that's pretty much done.... if a more junior doctor...sees a patient, they need*  
54 *to work the patient, but they then need to go and seek advice or opinion from a senior doctor.*  
55 *It's a slower process, and the more senior decision makers you have on the floor, the quicker*  
56 *you can make decisions (P48).*  
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3 *...if the Regs [Registrars] are busy, you need somebody more senior to talk to.... having the*  
4 *extra seniority around is brilliant.... it did make things a bit more streamlined...we could get*  
5 *people in and out nice and quickly (P25).*  
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8 Contrasting their COVID-19 experience with pre-COVID working conditions, interviewees noted how  
9 the presence of more medical staff on the hospital floor ensured that they had ‘...more support on  
10 the ground...’ (P12). The ease of access to clinical support from senior doctors was viewed as an  
11 important resource for interviewees, especially when deciding which issues to escalate while on-call.  
12 Interviewees also described how better access to senior doctors during COVID-19 resulted in quicker  
13 decision-making and an ability to provide more ‘streamlined’ care to patients.  
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### 19 **‘...it shouldn’t have taken a pandemic...’**

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23 Although COVID-19 brought uncertainty, anxiety and heightened health and safety risks to junior  
24 doctors (as well as to other frontline workers), it also brought adequate staffing levels, more  
25 manageable workloads, better relationships and improved morale. Interviewees felt that during the  
26 first wave of COVID-19 in Ireland, they were adequately resourced to do their job, due primarily to  
27 increased staffing. Interviewees were left wondering why it took a pandemic to bring about such  
28 positive change to their working conditions.  
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35 *...if it [increased staffing] was possible then [April 2020], why wouldn't it be possible in*  
36 *October/November 2019 where you're stretching three people to the absolute end of their*  
37 *capacity.... it used to always occur to me that it would take something horrific to happen to*  
38 *make things better (P1).*  
39

40  
41 *...it shouldn't have taken a pandemic to improve and revolutionise the healthcare system (P2).*  
42

43 *...we've been given a taste of what it's like to be treated well... (P24).*  
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46 Interviewees hoped the pandemic might represent ‘a watershed moment’ (P48) in terms of  
47 formalising and retaining some of the positive changes which occurred during the first wave. Their  
48 experience during COVID-19 had illustrated that the Irish health system *could* provide more  
49 adequate staffing and working conditions; ‘...the way it was staffed during COVID is the way it should  
50 be staffed in real life’ (P10).  
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55 However, at the time of interviews (June-July 2020), interviewees were fearful that working  
56 conditions and staffing levels were ‘slipping back’ (P48) to pre-COVID levels. These junior doctors  
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3 noted that just as non-COVID care demands began to rise in late summer 2020, they also noticed  
4 levels of staffing begin to decrease.  
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7 *It's getting really busy again from the non-COVID side.... It's really hard to kind of keep going*  
8 *and going back to normal (P10).*  
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10 *...no matter how hard you work, no matter how quickly...how efficiently...it's just not really*  
11 *possible to deliver the same level of care with less than half the number of staff (P48).*  
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15 For the junior doctors interviewed, their experiences of working during COVID-19 underscored the  
16 point that their working conditions; '...all stem from staffing...' (P44). The fear for interviewees going  
17 forward is a return to pre-COVID levels of staffing and consequently pre-COVID levels of workload  
18 and strain – within a healthcare context which must balance ongoing COVID care with a phased  
19 return of non-COVID care.  
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## 24 25 26 DISCUSSION

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28 COVID-19 exposed a range of weaknesses in health systems worldwide, most notably workforce  
29 shortages (1, 6). The threat that the first wave of COVID-19 would overwhelm the Irish health system  
30 necessitated a timely introduction of public health virus suppression measures as well as a  
31 reconfiguration of acute medical care (7, 17-20). We expected the pandemic and health system  
32 reconfiguration to cause further deterioration to the working conditions of Ireland's junior hospital  
33 doctors. Instead, as the findings illustrate, COVID-related changes at hospital level had the  
34 unintended consequence of actually *enhancing* the work environments of interviewees, primarily  
35 through perceived increases in medical staffing on the hospital floor. Paradoxically, the junior  
36 doctors interviewed contrasted the 'crisis' levels of staffing pre-COVID with enhanced levels of  
37 staffing during the first wave of the pandemic.  
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46 Extending previous HDRM research on the working lives of hospital doctors in Ireland (9-12) and  
47 recent international literature on healthcare workers experience of COVID-19 (6, 22), this article  
48 raises a simple but important point: staffing matters. The findings demonstrate the myriad,  
49 interrelated ways in which adequate medical staffing positively shaped junior doctors' experience of  
50 work during the first wave of COVID-19 in Ireland. Areas highlighted by interviewees included:  
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- 55 • Ability to take time off work when sick.
- 56 • Improved intra- and interdisciplinary relationships.
- 57 • Enhanced collective workplace morale.
- 58 • Better access to clinical support.
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- Upgraded decision-making efficiency.

It is important to reiterate that the junior hospital doctors interviewed experienced these improvements despite working on the frontline of a global pandemic. Rather than COVID-19 exacerbating workforce shortages, interviewees' experiences of the Irish health system during wave one indicate adequate staffing and an *enhanced* experience of work. These findings align with a qualitative study of nurses and doctors in China which reported improved team relationships and morale during COVID-19 (22). 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 (9, 10, 12). 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 doctors. Whether the result of redeployment or recruitment; additional staffing levels facilitated uptake of sick leave and improved 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 (3). Extending literature on workloads and psychological strain (9, 22, 40), 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 i.e. workloads, job quality, and work-life balance (9, 10, 15).

In light of the findings, it is worthwhile reflecting on approaches that support sustainable healthcare staffing. In their landmark study, Aiken et al. (41) 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 (42, 43). Despite evidence that medical staffing levels also matter in terms of patient outcomes (44) and working conditions (9-12), minimal attention has been paid to designing 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 (45). Setting standards for the medical staffing needed to



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3 ensure timely and effective care, this report highlights that the National Institute for Health and Care  
4 Excellence's (NICE) definition of safe nursing care is 'equally applicable to safe medical care'. Our  
5 findings add contextual data to this body of work which highlights the importance of enhanced  
6 medical staffing levels to ensure quality training time and working conditions for junior doctors, as  
7 well as a high standard of care for patients (45-47).  
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13 Despite being a challenging and traumatic time for healthcare workers, patients, and families, in  
14 forcing healthcare systems and services to reconfigure, COVID-19 represents a unique learning  
15 opportunity for health system improvement (21). Our article shows the importance of engaging with  
16 the experiences of frontline health workers (5). It is only by listening to, and hearing (3, 4), the  
17 experiences of those at the 'sharp end' of COVID-19 that we can identify sources of workplace strain  
18 and develop appropriate supports and strategies to overcome them (6, 24).  
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25 Doctors and healthcare staff, who represent the 'backbone' of healthcare systems (21), are already  
26 exhausted from managing COVID-19 throughout 2020 and into 2021 (48). Enhanced staffing capacity  
27 is required to enable healthcare workers to shoulder the weight of extended COVID-19 care  
28 demands. Some of the measures available in wave one (e.g. postponed non-urgent care) are no  
29 longer acceptable, or optimal, considering the impact of delayed care on waiting lists (49). Surge  
30 capacity strategies temporarily addressed staffing deficiencies (1, 18, 20) in the Irish health system,  
31 and improved the working conditions of interviewees. However, future workforce planning and  
32 health system resilience will require staffing mechanisms which monitor and respond to surges  
33 which compromise the safety of patients and staff (45, 50). Interviewees warned how a return to  
34 'normality' (i.e. understaffing) could undo the positive conditions experienced during the first wave  
35 of COVID-19, at a time when service demands, and work strain, are increasing.  
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45 In a context of continued COVID-19 pressures, international staffing shortages, ever expanding  
46 waiting lists, and evidence of burnout, identifying supports for the long-term sustainability of  
47 medical staffing is key. In this article, the work-related benefits of increased medical staffing are  
48 made clear. Adequate medical staffing improves hospital doctors' experience of work, and therefore  
49 must play a significant role in strategies which seek to address medical workforce retention. Health  
50 systems are only as resilient and flexible as the people staffing them are enabled to be.  
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## CONTRIBUTORS

JPB designed the research, conducted interviews, and led the analysis and writing up of this article. NH designed the research, conducted interviews, and undertook analysis. JC designed the research, conducted interviews, and undertook analysis. AM contributed to revising the article and the final submission. AMcD contributed to revising the article and the final submission. RC contributed to revising the article and the final submission. All authors have read and agreed to the published version of the manuscript.

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## 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).

## DATA AVAILABILITY

The datasets 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.

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For peer review only

## COREQ (CONsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

| Topic  | Item No. | Guide Questions/Description  | Reported on Page No. |
|--|----------|--|----------------------|
| <b>Domain 1: Research team and reflexivity</b> |          |  |                      |
| <i>Personal characteristics</i>                |          |  |                      |
| Interviewer/facilitator                        | 1        | Which author/s conducted the interview or focus group?   |                      |
| Credentials                                    | 2        | What were the researcher's credentials? E.g. PhD, MD   |                      |
| Occupation                                     | 3        | What was their occupation at the time of the study?  |                      |
| Gender   | 4        | Was the researcher male or female?   |                      |
| Experience and training                        | 5        | What experience or training did the researcher have?   |                      |
| <i>Relationship with participants</i>          |          |  |                      |
| Relationship established                       | 6        | Was a relationship established prior to study commencement?  |                      |
| Participant knowledge of the interviewer       | 7        | What did the participants know about the researcher? e.g. personal goals, reasons for doing the research   |                      |
| Interviewer characteristics                    | 8        | What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic                |                      |
| <b>Domain 2: Study design</b>                  |          |  |                      |
| <i>Theoretical framework</i>                   |          |  |                      |
| Methodological orientation and Theory          | 9        | What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis |                      |
| <i>Participant selection</i>                   |          |  |                      |
| Sampling                                       | 10       | How were participants selected? e.g. purposive, convenience, consecutive, snowball   |                      |
| Method of approach                             | 11       | How were participants approached? e.g. face-to-face, telephone, mail, email  |                      |
| Sample size                                    | 12       | How many participants were in the study?   |                      |
| Non-participation                              | 13       | How many people refused to participate or dropped out? Reasons?  |                      |
| <i>Setting</i>                                 |          |  |                      |
| Setting of data collection                     | 14       | Where was the data collected? e.g. home, clinic, workplace   |                      |
| Presence of non-participants                   | 15       | Was anyone else present besides the participants and researchers?  |                      |
| Description of sample                          | 16       | What are the important characteristics of the sample? e.g. demographic data, date  |                      |
| <i>Data collection</i>                         |          |  |                      |
| Interview guide                                | 17       | Were questions, prompts, guides provided by the authors? Was it pilot tested?  |                      |
| Repeat interviews                              | 18       | Were repeat interviews carried out? If yes, how many?  |                      |
| Audio/visual recording                         | 19       | Did the research use audio or visual recording to collect the data?  |                      |
| Field notes                                    | 20       | Were field notes made during and/or after the interview or focus group?  |                      |
| Duration                                       | 21       | What was the duration of the interviews or focus group?  |                      |
| Data saturation                                | 22       | Was data saturation discussed?   |                      |
| Transcripts returned                           | 23       | Were transcripts returned to participants for comment and/or   |                      |

| Topic                                  | Item No. | Guide Questions/Description  | Reported on Page No. |
|--|----------|--|----------------------|
|  |          | correction?  |                      |
| <b>Domain 3: analysis and findings</b> |          |  |                      |
| <i>Data analysis</i>                   |          |  |                      |
| Number of data coders                  | 24       | How many data coders coded the data?   |                      |
| Description of the coding tree         | 25       | Did authors provide a description of the coding tree?  |                      |
| Derivation of themes                   | 26       | Were themes identified in advance or derived from the data?  |                      |
| Software                               | 27       | What software, if applicable, was used to manage the data?   |                      |
| Participant checking                   | 28       | Did participants provide feedback on the findings?   |                      |
| <i>Reporting</i>                       |          |  |                      |
| Quotations presented                   | 29       | Were participant quotations presented to illustrate the themes/findings?<br>Was each quotation identified? e.g. participant number |                      |
| Data and findings consistent           | 30       | Was there consistency between the data presented and the findings?   |                      |
| Clarity of major themes                | 31       | Were major themes clearly presented in the findings?   |                      |
| Clarity of minor themes                | 32       | Is there a description of diverse cases or discussion of minor themes?   |                      |

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

**Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.**



# 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**

|                                 |   |
|---------------------------------|---|
| Journal:                        | <i>BMJ Open</i>   |
| Manuscript ID                   | bmjopen-2021-050358.R1  |
| Article Type:                   | Original research   |
| Date Submitted by the Author:   | 01-Jun-2021   |
| Complete List of Authors:       | Byrne, John-Paul; Royal College of Physicians of Ireland, Research Department<br>Creese, Jennifer; Royal College of Physicians of Ireland, Research Department<br>Matthews, Anne; Dublin City University, School of Nursing and Human Sciences<br>McDermott, Aoife ; Cardiff Business School, Management, Employment and Organization<br>Costello, Richard; Royal College of Surgeons Ireland, Respiratory Medicine<br>Humphries, Niamh; Royal College of Physicians of Ireland |
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**TITLE**

‘...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

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## 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. Pre-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 & 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 (COREQ) 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. Firstly, interviewees felt there were more doctors staffing the hospital wards during the first wave of the pandemic. Secondly, 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. Thirdly, 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 wellbeing.

## 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 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.

## STRENGTHS & LIMITATIONS

- 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 e.g. nurses, allied health professionals.

## 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 COVID-19 patients, expand capacity, and protect patients and staff from infection. Specific adaptations included: restricting out-patient 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

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3 work environment. In an acute care context, where working conditions directly impact the safety  
4 and well-being of staff and patients alike, it is vital that we listen to, and understand, the  
5 experiences and concerns of frontline healthcare workers (4, 5). The frontline perspective must be  
6 heard if health systems are to understand how this unanticipated shock (6) played out on the  
7 hospital floor; to ascertain what lessons can be gleaned from the pandemic, and what resources are  
8 required to ensure the continued provision of health services post pandemic (7, 8). The need to  
9 engage with frontline health workers is even more pertinent when we consider that, in Ireland pre-  
10 pandemic, frontline staff were already under strain from the demands of working within a health  
11 system with significant resource constraints.  
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20 Prior to COVID-19, working conditions for hospital doctors in the Irish health system were difficult  
21 and deteriorating (6). To illustrate the infrastructural context; in 2017, Ireland had fewer doctors  
22 (3.1) and hospital beds (3) per 1,000 population than the Organisation for Economic Co-operation  
23 and Development (OECD) average of 3.5 for doctors and 4.7 for beds, and the highest occupancy  
24 rate (95%) of in-patient hospital beds in the OECD (9). In early 2020, the Irish public health system  
25 had 5 intensive care beds per 100,000 population compared to a European Union (EU) rate of 14.5  
26 (10) – illustrating a limited intensive care infrastructure when compared to its European  
27 counterparts. These OECD and EU rates indicate a health system with comparatively restricted  
28 resources – which affect the working conditions of hospital doctors (11). Research has shown that,  
29 pre-pandemic, hospital doctors in Ireland struggled with understaffing, work overload, long and  
30 unpredictable hours, and poor work-life balance (6, 11-13). These extreme working conditions drove  
31 high rates of burnout, emigration, and medical workforce attrition (14-16) and reflect a health  
32 system under strain due to historic underinvestment, austerity-related cuts, and infrastructural  
33 deficits (17, 18). It was against this backdrop that the Irish health system, and its frontline staff,  
34 responded to the sudden and increased demands of the COVID-19 threat.  
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47 To help suppress the transmission of COVID-19 and diminish the burden placed on hospitals, the  
48 Irish government employed a range of public health measures. These included: the mandatory  
49 closure of non-essential businesses; asking all workers to work from home where possible; banning  
50 of large gatherings; advising over 70's and medically-vulnerable individuals to 'cocoon' at home; and  
51 introducing nationwide restrictions on travel and movement during the COVID-19 case number  
52 peaks of April, October and December 2020 (19). To meet anticipated demands in acute care,  
53 hospital services were restructured primarily through the closure of out-patient clinics and  
54 cancellation of elective procedures, the acquiring of private hospital capacity, and the rapid  
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3 development of COVID and non-COVID care pathways (20). The COVID-19 response also saw the  
4 introduction of a range of health workforce and surge capacity strategies including: the  
5 redeployment of hospital doctors, the early entry of interns into the workforce, and a campaign to  
6 recruit additional healthcare workers (e.g. 'Be on Call for Ireland') (19-21).  
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11 This reconfiguration of hospital services and doctors to meet the immediate needs of COVID-19  
12 patients was an acknowledgement of the pandemic threat. It was driven by the need to ensure  
13 sufficient numbers of health workers, beds, Personal Protective Equipment (PPE), masks, and  
14 ventilators to protect staff and provide adequate and safe care during the pandemic. However, as  
15 the impact of the COVID-19 pandemic extends into 2021, a longer-term approach is required. It is  
16 critical we do not lose sight of the experiences and concerns of frontline staff who are the  
17 'backbone' of health systems, and have been coping with colossal and prolonged pandemic-related  
18 change to their working conditions and lives (22). For hospital doctors, the pandemic, and  
19 subsequent restructuring of services and reconfiguration of workforces, has brought sudden  
20 redeployment, PPE use, high infection risk, and new methods, environments and stressors of  
21 practice (23). As the 'canaries' in the COVID-coalmine (24), understanding the impact of, and  
22 learning from, these transformed working conditions is critical to the ongoing pandemic response  
23 and future health service strategies (1, 25). Subsequently, to inform such learning, the objective of  
24 this study was to explore the experience of junior hospital doctors on the frontline of COVID-19.  
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37 'Junior' hospital doctor is a term which refers to all doctors who have completed a medical  
38 qualification but have not reached consultant or specialist grade. In the Irish health system these  
39 doctors are referred to as non-consultant hospital doctors (NCHDs) which includes hospital doctors  
40 at all stages of postgraduate medical training (i.e. intern to specialist registrar), as well as NCHDs not  
41 on postgraduate training schemes who are typically employed on 6-12-month contracts, or as  
42 agency locums (26). We focus on the experience of junior hospital doctors as they comprise the  
43 majority of hospital doctors employed in the Irish public health service (68%) (27) and, to a greater  
44 extent than hospitals in other countries, Irish hospitals rely heavily on the work of these doctors to  
45 deliver care (26, 28). Previous research has shown that junior hospital doctors have somewhat  
46 different expectations of their medical careers when compared with earlier generations (29), and are  
47 perhaps more likely to emigrate to achieve working life goals of shorter working hours and greater  
48 work-life balance (30). Research from the United Kingdom (UK) and Australia has also highlighted  
49 the powerful impact of junior hospital doctors' work experiences, illustrating how perceptions of  
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3 work environments can influence career decisions (31), and the detrimental impact that extended  
4 working hours can have on mental health (32).  
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8 With regards to the pandemic response in Ireland, junior hospital doctors were a key part of medical  
9 workforce surge strategies (e.g. accelerated graduation of medical students into intern roles) and  
10 reconfigured COVID and non-COVID care pathways. They staffed patient-facing roles on the medical  
11 frontline during COVID-19 and therefore had high risks of COVID-19 infection (33), especially those  
12 working in acute receiving specialties (34, 35). In sum, the working lives of junior hospital doctors'  
13 were profoundly impacted by the COVID-19 pandemic (36). In this article we explore how the  
14 pandemic and the health system response affected the working conditions of junior hospital doctors  
15 during the first wave of COVID-19 in Ireland. As well as meeting the study objective and reporting  
16 our findings, we also consider how the insights provided by junior hospital doctors might be used to  
17 enhance working conditions and improve hospital doctor retention in the Irish health system.  
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## 28 METHODS

### 29 Study design and participants

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32 This study is part of a wider, interdisciplinary research project, the *Hospital Doctor Retention and*  
33 *Motivation* (HDRM) project (37). HDRM is based in the Royal College of Physicians of Ireland (RCPI)  
34 and funded by the Health Research Board (HRB) to conduct primary research to generate insights  
35 which will inform and improve doctor retention policy in the Irish health system. To date, HDRM  
36 researchers have published findings on the extent, and job-related drivers, of doctor emigration (6,  
37 30), the organisation of medical work (11), and hospital doctors' struggle for work-life balance (12).  
38 For this article, underpinned by interpretivist assumptions and pragmatic, descriptive qualitative  
39 aims (38) we conducted semi-structured interviews with junior hospital doctors to explore their  
40 experiences of working in Irish hospitals during the first wave of the COVID-19 pandemic in spring  
41 2020. The Consolidated criteria for Reporting Qualitative (COREQ) research guides the reporting of  
42 this study (39).  
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53 Using purposive and snowball sampling techniques, a call for interviewees was launched on 10 June  
54 2020 via the HDRM project website and social media. A total of 48 one-on-one, semi-structured  
55 interviews were conducted. Prior to each interview, doctors were provided with an information  
56 leaflet that outlined the goals of the HDRM project, the rationale for this piece of research, what  
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3 participation involved, and data processing details. A digitally-signed informed consent form was  
4 completed before each interview.  
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## 9 **Data collection**

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11 Through close engagement with participants, a researcher's personal characteristics can influence  
12 the nature of the qualitative data collected (39). However, this is minimised by the varying  
13 characteristics of the interviewers who comprised; the principal investigator who is female, and a  
14 senior health systems researcher (NH), a male postdoctoral researcher with a background in  
15 sociology (JPB) and a female postdoctoral researcher with a background in social anthropology (JC).  
16 All interviewers hold PhDs and are experienced in qualitative methods. The team also held weekly  
17 de-brief meetings to discuss the interview process as data collection progressed.  
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25 Due to pandemic-related social distancing measures and travel restrictions, semi-structured one-on-  
26 one interviews were conducted via Zoom or telephone – whichever was preferable for the  
27 interviewee. Interviews were conducted by the project team (NH, JPB, JC) between June 12<sup>th</sup> and  
28 July 10<sup>th</sup>, 2020 - a period between the April and October 2020 COVID-19 peaks in Ireland (19).  
29 Interviews lasted an average of 45 minutes with a range of 23 to 93 minutes. The interview topic  
30 guide was informed by previous HDRM research on hospital doctors' work (6, 11, 12), and organised  
31 around seven themes: demographic information, working as a doctor (before and during COVID), the  
32 experience of work during the pandemic, the impact of the pandemic on wellbeing, doctors who  
33 returned to Ireland to work during the pandemic for COVID-19 (if applicable), doctors who had  
34 emigration plans thwarted by COVID-19 (if applicable), and future career plans.  
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44 This article depicts the experience of the 30 junior hospital doctors interviewed among the 48  
45 interviewees. As set out in the introduction, these doctors represent the future of the medical  
46 profession and as such their concerns and perspectives are vital for informing crisis responses and  
47 medical workforce strategies. Interviews were audio-recorded and transcribed verbatim by a third-  
48 party. Transcripts were de-identified by interviewers and all interviewees were offered the  
49 opportunity to review and modify their transcripts for corrections prior to analysis. The interviewers  
50 (NH, JPB, JC) had no prior professional relationship with the 30 interviewees. Data were stored,  
51 organised, and analysed using MaxQDA software (V20.1.1).  
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## 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 conducted (41) using a combination of *a priori* codes set by the researchers prior to analysis (i.e. deductive coding) and *a posteriori* codes identified within the data (i.e. inductive coding) (42). This combination enabled the researchers to explore topics of interest to the HDRM project while also allowing space to investigate specific data-driven issues and experiences. NH and JPB conducted primary coding based on the topic guide themes. JC reviewed samples of this coding process. Sub-coding of larger codes (e.g. working during COVID-19) was undertaken by JPB and JC. A project review meeting was conducted prior to, and after, each coding stage. For this article, JPB 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, JPB revisited the codes to inductively explore the junior hospital doctor dataset 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 emerging from our analysis. These 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 (e.g. 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.

|               |   |          |                    |           |          |
|---------------|---|----------|--------------------|-----------|----------|
| <b>Gender</b> | Female                                  | 22 (73%) | <b>Degree Year</b> | 2016-2019 | 20 (66%) |
|               | Male                                    | 8 (27%)  |                    | 2011-2015 | 8 (27%)  |
| <b>Grade</b>  | Specialist Registrar (SpR) <sup>1</sup> | 8 (27%)  |                    | 2006-2010 | 2 (7%)   |
|               | Registrar <sup>2</sup>                  | 3 (10%)  |                    |           |          |
|               | Senior House Officer (SHO) <sup>3</sup> | 13 (43%) |                    |           |          |
|               | Intern <sup>4</sup>                     | 6 (20%)  |                    |           |          |

<sup>1</sup> Advanced higher specialty trainee doctor; <sup>2</sup> experienced specialty (trainee or equivalent) doctor; <sup>3</sup> basic specialty trainee (or equivalent) doctor; <sup>4</sup> new graduate doctor.

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 to pre-COVID experiences (e.g. 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 re-structured in response to COVID, 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).*

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4 *It was better than I remember.... they just got loads of extra staff because of the pandemic... It*  
5 *was really good (P31).*  
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9 Contrasting their experiences of working during COVID-19 with previous experiences in the Irish  
10 health system, interviewees commented on how: i) there were simply more doctors around; ii) this  
11 was an unfamiliar experience, and; iii) the medical staffing levels during COVID-19 should have been  
12 in place long before COVID-19; '...hospitals are probably more properly staffed than they ever have  
13 been' (P12). For these junior hospital doctors, sufficient staffing during COVID-19 led to more  
14 manageable workloads and more predictable working hours during the first wave of the pandemic in  
15 Ireland.  
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### 23 **More doctors improved the staff experience**

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25 Interviewees described how their working conditions had improved as a result of increased medical  
26 staffing during COVID19. Increased staffing made a significant difference to their work experience as  
27 it: (i) facilitated sick leave and call cover, (ii) improved morale and relationships, and (iii) increased  
28 availability of clinical support.  
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#### 35 (i) Facilitated sick leave and call cover

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37 Working on the frontline, junior hospital doctors were at a high risk of contracting COVID-19. As a  
38 result, medical teams constantly had to be re-configured as doctors self-isolated or quarantined  
39 when they came into contact with the virus. Additional staffing capacity was provided in anticipation  
40 of doctors being absent due to COVID-19 protocols. Increased medical staffing levels provided teams  
41 with the flexibility to respond to sudden and unpredictable rota gaps as 'reserves' were used to  
42 cover shifts.  
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49 *...there were way more of us.... It's actually really nice to be adequately staffed. There was sick*  
50 *cover and cover if you couldn't do your call. You were encouraged not to come in if you were*  
51 *unwell.... It was really nice.... before that, if you were sick or couldn't come in, you were leaving*  
52 *people really stuck...you'd feel really bad. But it wasn't like that during COVID.... we just had*  
53 *enough staff.... we had eight reserves for the day job.... we never have reserves.... that was to*  
54 *facilitate, I suppose, being able to be unwell... (P24).*  
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58 With additional staff available, interviewees felt it was '...easier to take any [sick] leave' (P47). This  
59 contrasted with interviewees' previous experiences where taking sick leave meant leaving  
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3 colleagues 'really stuck'. Pre-pandemic, a desire not to leave your team short-staffed encouraged  
4 presenteeism, with junior hospital doctors routinely presenting for work even when they were  
5 unwell. With mandated sick leave for COVID-19 and isolation leave for close contacts of confirmed  
6 cases, more doctors were made available as 'reserves' to plug any gaps in rotas. As a result,  
7 interviewees felt 'able to be unwell'. The level of cover available ensured that; 'If people did have to  
8 self-isolate for a few days...we had extra staff to step in' (P48).  
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## 15 16 (ii) Improved morale and relationships

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18 Interviewees also connected the availability of additional medical staff to their experience of more  
19 manageable workloads, improved inter-professional relationships and increased workplace morale  
20 during the first wave of COVID19.  
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25 *There's always at least three or four consultants around. It makes them more approachable....*  
26 *Without having to go running around, looking for them.... when we were referring...they*  
27 *weren't up the walls as well.... the workload was just much easier.... It made them more*  
28 *approachable.... it's a lot more harmonious when you have...one or two extra bodies (P25).*  
29

30 *I think the morale was really good. Everything was well staffed. There was a pretty*  
31 *good...sense of...collective effort among everyone in the hospital, which I thought was really*  
32 *great.... People were relaxed, and people weren't overworked. And that was good for kind of*  
33 *interdisciplinary relationships in the hospital, which was...refreshing (P47).*  
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37 Workloads for senior and junior hospital doctors seemed more manageable during the first wave,  
38 with interviewees attributing this to sufficient staffing levels. For interviewees, this resulted in a  
39 perception of consultants as 'more approachable', and medical staff in general as more relaxed,  
40 thereby improving workplace morale. 'Extra bodies' on the hospital floor led to more amicable  
41 relations between junior and senior doctors, improved morale, and better interdisciplinary  
42 relationships; '...even if you were talking to people from other specialties, everyone was very  
43 helpful...' (P6). Despite the challenges of providing acute care during the first wave of the COVID-19  
44 pandemic, the impact of increased medical staffing on doctors' workloads meant that workplace  
45 relationships and morale were improved.  
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4 (iii) Increased availability of clinical support  
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6 For these junior hospital doctors, the greater presence and availability of consultants on the hospital  
7 floor made it easier to access senior decision makers when needed. Interviewees felt they had a  
8 greater level of clinical support and that this helped to improve efficiency at work.  
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13 *...if you think about the process of seeing a patient...if a senior doctor...sees a patient and  
14 makes a decision, that's pretty much done.... if a more junior doctor...sees a patient, they need  
15 to work the patient, but they then need to go and seek advice or opinion from a senior doctor.  
16 It's a slower process, and the more senior decision makers you have on the floor, the quicker  
17 you can make decisions (P48).*  
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19  
20 *...if the Regs [Registrars] are busy, you need somebody more senior to talk to.... having the  
21 extra seniority around is brilliant.... it did make things a bit more streamlined...we could get  
22 people in and out nice and quickly (P25).*  
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24  
25 Contrasting their COVID-19 experience with pre-COVID working conditions, interviewees noted how  
26 the presence of more medical staff on the hospital floor ensured that they had '...more support on  
27 the ground...' (P12). The ease of access to clinical support from senior doctors was viewed as an  
28 important resource for interviewees, especially when deciding which issues to escalate while on-call.  
29 Interviewees also described how better access to senior doctors during COVID-19 resulted in quicker  
30 decision-making and an ability to provide more 'streamlined' care to patients.  
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37 **It took a pandemic to make change happen**  
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40 Although COVID-19 brought uncertainty, anxiety and heightened health and safety risks to junior  
41 hospital doctors (as well as to other frontline workers), it also brought adequate staffing levels, more  
42 manageable workloads, better relationships and improved morale. Interviewees felt that during the  
43 first wave of COVID-19 in Ireland, they were adequately resourced to do their job, due primarily to  
44 increased staffing. Interviewees were left wondering why it had taken a pandemic to bring about  
45 such positive change to their working conditions.  
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52 *...if it [increased staffing] was possible then [April 2020], why wouldn't it be possible in  
53 October/November 2019 where you're stretching three people to the absolute end of their  
54 capacity.... it used to always occur to me that it would take something horrific to happen to  
55 make things better (P1).*  
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57 *...it shouldn't have taken a pandemic to improve and revolutionise the healthcare system (P2).*  
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59 *...we've been given a taste of what it's like to be treated well... (P24).*  
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5 Interviewees hoped the pandemic might represent ‘a watershed moment’ (P48) in terms of  
6 formalising and retaining some of the positive changes which occurred during the first wave. Their  
7 experience during COVID-19 had illustrated that the Irish health system *could* provide more  
8 adequate staffing and working conditions; ‘...the way it was staffed during COVID is the way it should  
9 be staffed in real life’ (P10).

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15 However, at the time of interviews (June-July 2020), interviewees were fearful that working  
16 conditions and staffing levels were ‘slipping back’ (P48) to pre-COVID levels. Interviewees noted that  
17 just as non-COVID care demands began to rise in late summer 2020, staffing levels began to  
18 decrease.  
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23 *It's getting really busy again from the non-COVID side.... It's really hard to kind of keep going*  
24 *and going back to normal (P10).*

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26 *...no matter how hard you work, no matter how quickly...how efficiently...it's just not really*  
27 *possible to deliver the same level of care with less than half the number of staff (P48).*  
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30 For the junior hospital doctors interviewed, their experiences of working during COVID-19  
31 underscored the point that their working conditions; ‘...all stem from staffing...’ (P44). The fear for  
32 interviewees going forward is the possibility of a return to pre-COVID levels of staffing and pre-  
33 COVID levels of workload and strain..  
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## 39 DISCUSSION

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42 Extending previous HDRM research on the working lives of hospital doctors in Ireland (6, 11-13) and  
43 recent international literature on healthcare workers experience of COVID-19 (8, 23), this article  
44 raises a simple but important point: staffing matters. The findings illustrate how COVID-related  
45 changes at hospital level had the unintended consequence of enhancing the work environments of  
46 interviewees. Paradoxically, interviewees contrasted the ‘crisis’ levels of staffing and challenges of  
47 work pre-COVID with the enhanced levels of staffing and more positive environments experienced  
48 during the first wave of the pandemic. The findings detail the myriad, interrelated ways in which  
49 adequate medical staffing positively shaped interviewees’ experiences of work during the first wave  
50 of COVID-19 in Ireland. These included facilitating sick leave and cover, improved morale and  
51 relationships, and increased availability of clinical support. These findings add to previously  
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3 published HDRM research which considers the impact of non-staffing factors on interviewees'  
4 working lives and well-being during wave one of COVID-19 (43, 44).  
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8 COVID-19 exposed a range of weaknesses in health systems worldwide, most notably workforce  
9 shortages (1, 8). The threat that the first wave of COVID-19 would overwhelm the Irish health system  
10 necessitated a timely introduction of public health virus suppression measures as well as a  
11 reconfiguration of acute medical care (9, 18-21). We expected the pandemic and health system  
12 reconfiguration to cause further deterioration to the working conditions of Ireland's junior hospital  
13 doctors. However, rather than exacerbating workforce shortages, interviewees' spoke about  
14 adequate staffing and an enhanced experience of work, despite working on the frontline of a global  
15 pandemic. These findings align with a qualitative study of nurses and doctors in China which  
16 reported improved team relationships and morale during COVID-19 (23). However, the findings  
17 contrast sharply to our pre-pandemic research on the working lives of hospital doctors' in Ireland,  
18 conducted in 2018 and 2019, which highlighted understaffing, extreme workloads, presenteeism,  
19 and work-life conflict (6, 12, 13). The article also advances the findings of Byrne et al. (11) in  
20 illustrating how medical staffing levels can shape the nature of interactions with medical colleagues  
21 and the availability of clinical support.  
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33 The findings demonstrate why staffing matters for junior hospital doctors. Whether the result of  
34 redeployment or recruitment, additional staffing levels facilitated uptake of sick leave and  
35 improvements to workplace relationships, collaboration, access to clinical support and workplace  
36 morale. These are working conditions critical to hospital doctors' quality of working life. They are  
37 also conditions which enable doctors to 'maximise' their ability to provide a high standard of care  
38 over a long period of time (4). Extending literature on workloads and psychological strain (6, 23, 45),  
39 this article demonstrates how medical staffing levels have implications for interpersonal  
40 environments, organisational cultures, and the sustainability of medical work practices and  
41 workforces. Staffing levels represent a, if not *the*, key work resource as they powerfully shape the  
42 impact of work demands on doctors' working lives and well-being i.e. workloads, job quality, and  
43 work-life balance (6, 12, 16).  
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53 In light of the findings, it is worthwhile reflecting on approaches that support sustainable healthcare  
54 staffing. In their landmark study, Aiken et al. (46) found that nurse staffing levels affect both patient  
55 outcomes and nurse burnout and job satisfaction, and provided a basis for the introduction of  
56 recommended staffing levels in nursing. The development of policies for, and approaches to,  
57 determining nurse staffing levels has resulted in a range of nationally or locally mandated nurse-to-  
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3 patient ratios in health systems across the UK and Europe (47, 48). Despite evidence that medical  
4 staffing levels also matter in terms of patient outcomes (49) and working conditions (6, 11-13),  
5 minimal attention has been paid to developing safe and appropriate staffing levels for doctors. A  
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7 2018 report by the Royal College of Physicians emphasised this point in developing the first  
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9 recommendations for safe medical staffing levels in UK hospitals (50). Setting standards for the  
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11 medical staffing needed to ensure timely and effective care, this report highlights that the National  
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13 Institute for Health and Care Excellence's (NICE) definition of safe nursing care is 'equally applicable  
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15 to safe medical care'. Our findings add contextual data to this body of work which highlights the  
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17 importance of enhanced medical staffing levels to ensure quality training time and working  
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19 conditions for junior hospital doctors, as well as a high standard of care for patients (50-52). The  
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21 nature and impact of healthcare workers' working conditions represent a crucial area of health  
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23 research, especially when considering the recognised links between staff well-being and the safety  
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25 and quality of healthcare delivery (53).

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27 Despite being a challenging and traumatic time for healthcare workers, patients, and families, in  
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29 forcing healthcare systems and services to reconfigure, COVID-19 represents a unique learning  
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31 opportunity for health system improvement (22). Our article shows the importance of engaging with  
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33 the experiences of frontline health workers (7). It is only by listening to, and hearing (4, 5), the  
34  
35 experiences of those at the 'sharp end' (5) of COVID-19 that we can identify sources of workplace  
36  
37 strain and develop appropriate supports and strategies to overcome them (8, 25).

38  
39 Doctors and healthcare staff, who represent the 'backbone' of healthcare systems (22), are already  
40  
41 exhausted from managing COVID-19 throughout 2020 and 2021 (54). Enhanced staffing capacity is  
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43 required to enable healthcare workers to shoulder the weight of extended COVID-19 care demands.  
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45 Some of the measures available in wave one (e.g. the postponement of non-urgent care) are no  
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47 longer acceptable, or optimal, considering the impact of delayed care on waiting lists (55). Surge  
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49 capacity strategies temporarily addressed staffing deficiencies (1, 19, 21) in the Irish health system,  
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51 and improved the working conditions of interviewees. However, future workforce planning and  
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53 health system resilience will require staffing mechanisms that monitor and respond to surges which  
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55 compromise the safety of patients and staff (50, 56). Interviewees warned that a return to  
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57 'normality' (i.e. understaffing) could undo the improvements to working conditions experienced  
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59 during the first wave of COVID-19, at a time when service demands, and work strain, are increasing.  
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3 The findings advance our understanding of how the first wave of COVID-19 impacted, and improved,  
4 the work experiences of junior hospital doctors in Ireland. However, our study has several  
5 limitations; due to the qualitative research design and sampling criteria there is potential for self-  
6 selection bias and the findings cannot be deemed as representative of all junior hospital doctors'  
7 experiences. As the article focuses on the working conditions of hospital doctors, it does not address  
8 the experience of specific specialties, or other healthcare workers e.g. nurses. Interviews took place  
9 just after the first COVID-19 wave in Ireland, which aids recall but means interviewees did not have  
10 experience of balancing COVID-19 and non-urgent care demands. Further research is required to  
11 explore the experiences of junior hospital doctors in later waves of the COVID-19 pandemic.  
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20 In a context of continued COVID-19 pressures, international staffing shortages, ever expanding  
21 waiting lists, and evidence of burnout, identifying supports for the long-term sustainability of  
22 medical staffing is key. In this article, the work-related benefits of increased medical staffing are  
23 made clear. Adequate medical staffing can improve hospital doctors' experience of work, and  
24 therefore must play a significant role in strategies which seek to address medical workforce  
25 retention. Health systems are only as resilient and flexible as the people staffing them are enabled to  
26 be.  
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## 34 **CONTRIBUTORS**

35 JPB designed the research, conducted interviews, and led the analysis and writing up of this article.  
36 NH obtained funding for the study, designed the research, conducted interviews, and undertook  
37 analysis. JC designed the research, conducted interviews, and undertook analysis. AM contributed to  
38 revising the article and the final submission. AMcD contributed to revising the article and the final  
39 submission. RC contributed to revising the article and the final submission. All authors have read and  
40 agreed to the published version of the manuscript.  
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53 analysis, and interpretation of data, or in writing the manuscript.  
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## COMPETING INTERESTS

None declared

## 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).

## DATA AVAILABILITY

The datasets 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.

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## COREQ (CONsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

| Topic  | Item No. | Guide Questions/Description  | Reported on Page No. |
|--|----------|--|----------------------|
| <b>Domain 1: Research team and reflexivity</b> |          |  |                      |
| <i>Personal characteristics</i>                |          |  |                      |
| Interviewer/facilitator                        | 1        | Which author/s conducted the interview or focus group?   |                      |
| Credentials                                    | 2        | What were the researcher's credentials? E.g. PhD, MD   |                      |
| Occupation                                     | 3        | What was their occupation at the time of the study?  |                      |
| Gender   | 4        | Was the researcher male or female?   |                      |
| Experience and training                        | 5        | What experience or training did the researcher have?   |                      |
| <i>Relationship with participants</i>          |          |  |                      |
| Relationship established                       | 6        | Was a relationship established prior to study commencement?  |                      |
| Participant knowledge of the interviewer       | 7        | What did the participants know about the researcher? e.g. personal goals, reasons for doing the research   |                      |
| Interviewer characteristics                    | 8        | What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic                |                      |
| <b>Domain 2: Study design</b>                  |          |  |                      |
| <i>Theoretical framework</i>                   |          |  |                      |
| Methodological orientation and Theory          | 9        | What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis |                      |
| <i>Participant selection</i>                   |          |  |                      |
| Sampling                                       | 10       | How were participants selected? e.g. purposive, convenience, consecutive, snowball   |                      |
| Method of approach                             | 11       | How were participants approached? e.g. face-to-face, telephone, mail, email  |                      |
| Sample size                                    | 12       | How many participants were in the study?   |                      |
| Non-participation                              | 13       | How many people refused to participate or dropped out? Reasons?  |                      |
| <i>Setting</i>                                 |          |  |                      |
| Setting of data collection                     | 14       | Where was the data collected? e.g. home, clinic, workplace   |                      |
| Presence of non-participants                   | 15       | Was anyone else present besides the participants and researchers?  |                      |
| Description of sample                          | 16       | What are the important characteristics of the sample? e.g. demographic data, date  |                      |
| <i>Data collection</i>                         |          |  |                      |
| Interview guide                                | 17       | Were questions, prompts, guides provided by the authors? Was it pilot tested?  |                      |
| Repeat interviews                              | 18       | Were repeat interviews carried out? If yes, how many?  |                      |
| Audio/visual recording                         | 19       | Did the research use audio or visual recording to collect the data?  |                      |
| Field notes                                    | 20       | Were field notes made during and/or after the interview or focus group?  |                      |
| Duration                                       | 21       | What was the duration of the interviews or focus group?  |                      |
| Data saturation                                | 22       | Was data saturation discussed?   |                      |
| Transcripts returned                           | 23       | Were transcripts returned to participants for comment and/or   |                      |

| Topic                                  | Item No. | Guide Questions/Description  | Reported on Page No. |
|--|----------|--|----------------------|
|  |          | correction?  |                      |
| <b>Domain 3: analysis and findings</b> |          |  |                      |
| <i>Data analysis</i>                   |          |  |                      |
| Number of data coders                  | 24       | How many data coders coded the data?   |                      |
| Description of the coding tree         | 25       | Did authors provide a description of the coding tree?  |                      |
| Derivation of themes                   | 26       | Were themes identified in advance or derived from the data?  |                      |
| Software                               | 27       | What software, if applicable, was used to manage the data?   |                      |
| Participant checking                   | 28       | Did participants provide feedback on the findings?   |                      |
| <i>Reporting</i>                       |          |  |                      |
| Quotations presented                   | 29       | Were participant quotations presented to illustrate the themes/findings?<br>Was each quotation identified? e.g. participant number |                      |
| Data and findings consistent           | 30       | Was there consistency between the data presented and the findings?   |                      |
| Clarity of major themes                | 31       | Were major themes clearly presented in the findings?   |                      |
| Clarity of minor themes                | 32       | Is there a description of diverse cases or discussion of minor themes?   |                      |

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

**Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.**