PREPAREDNESS OF RECENT MEDICAL GRADUATES TO MEET ANTICIPATED HEALTHCARE NEEDS

GMC1203

Summary Report

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1. Background

It is vital that medical graduates are prepared for their first day of work as a trainee doctor. Graduates being prepared for practice has an important impact on patient safety and the functioning of the healthcare team. The conceptualisation of 'preparedness for practice' has however widened now to involve doctors being prepared, not just for when they start practising, but for their whole career. Key organisations have identified the needs and challenges doctors will have to meet in the future. The General Medical Council (GMC) are particularly interested in finding out whether medical graduates are prepared to meet anticipated healthcare needs in the following areas of practice:

1. the changing doctor-patient relationship – characterised by more involvement of patients in decision making and using information to enhance their own health management

2. the doctor in a multi-disciplinary team (MDT) – increased importance of interdisciplinary team working with doctors from all care settings and specialities; and with other health and social care professionals

3. complex clinical decision-making clinical – decisions characterised by incomplete information and a high degree of uncertainty

2. Research Questions

RQ1. What are the core skills, capabilities and attributes doctors will require to be prepared:

a) to empower patients and adapt to the changing doctor-patient relationship
b) to work effectively as part of the future multi-disciplinary teams across different healthcare settings
c) to make complex clinical decisions with incomplete information and a high degree of uncertainty.

RQ2. To what extent do new graduate doctors have the skills, capabilities and attributes that will enable them to empower patients and adapt to the changing doctor-patient relationship?

RQ3. To what extent do new graduate doctors have the skills, capabilities and attributes to work effectively as part of the future MDT across different healthcare settings?

RQ4. To what extent do new graduate doctors have the skills, capabilities and attributes to make complex clinical decisions with incomplete information and a high degree of uncertainty?

3. Methods

The research used a mixed methods design including:

1. A rapid review of the literature to provide a pragmatic operationalisation of the three areas of practice. The search strategy involved key medical and education databases, citation searching and grey literature searches. Searches returned over 1,960 articles that were screened against inclusion criteria. There were 34 studies included in the mapping stage and 20 in the narrative synthesis across the three areas of practice.

2. National stakeholder interviews to explore foundation doctors' preparedness for practice in the three specified areas of practice. Interviews lasting 45-60 minutes were conducted with 67 stakeholders across the UK e.g. Foundation Year 1 (FY1) and Foundation Year 2 (FY2) doctors, educational and clinical supervisors, postgraduate Deans, patient representatives, Foundation Programme leads, medical educators, other healthcare professionals. The interviews were audio recorded, transcribed, analysed thematically and coded in NVivo.

3. Post-simulation interviews to explore foundation doctors' preparedness for MDT working and complex clinical decision-making in acute settings. 20 FY1 and FY2 doctors in a trust in the South West of England took part in high fidelity simulations using SimMan® 3G technology. Following the simulations (approx 20 minutes duration) participants undertook a structured 30-40 minute debrief based on the Crisis Resource Management (CRM) approach from trained simulation faculty sessions (from anaesthetics, physician or emergency medicine background). Faculty and participants also completed a CRM template online. Participants then took part in individual semi-structured interviews with a member of the research team. Individual interviews were also held with five simulation faculty members involved in running the scenarios. The 25 interviews lasted 20-60 minutes and were held approximately 2-4 weeks after the simulation. Interviews and CRM templates were audio recorded, transcribed, analysed thematically and inductively coded in NVivo.

4. Results & Discussion

4.1 Key Findings

4.1.1 RQ1: Core skills, capabilities & attributes for anticipated healthcare needs

The core skills, capabilities and attributes identified for anticipated health care needs are identified in Table 1. Good communication skills, self-awareness and medical knowledge were identified as being important across all three areas of practice. There are also specific skills that are unique for each area of practice i.e. skills for patient-centred care were important to underpin the changing doctor-patient relationship, teamworking for MDT working, and confidence for complex clinical decision-making.

Table 1: Key skills capabilities and attributes identified by research methods

	Key skills, capabilities & attributes	Changing doctor-patient relationship	Multidisciplinary team working	Complex clinical decision making
1.	Communication	**RR, NSI**	**RR, NSI, PSI**	**RR, NSI, PSI**
2.	Self-awareness	**RR, NSI**	**RR, NSI**	**RR, NSI, PSI**
3.	Medical knowledge	**NSI**		**NSI, PSI**
4.	Human factors	**RR, NSI, PSI**	**RR, NSI, PSI**	**RR, NSI, PSI**
5.	Fostering empowerment	**NSI**		
6.	Team working		**RR, NSI, PSI**	**PSI**
7.	Leadership & followership		**RR, NSI, PSI**	**PSI**
8.	Confidence		**NSI, PSI**	**NSI**
9.	Patient-centred care	**RR, NSI**	**NSI**	
10.	Decision-making skills		**RR**	**RR, PSI**
11.	Empathy	**NSI**		
12.	Interpersonal skills	**NSI**	**RR, NSI, PSI**	**NSI, PSI**
13.	Professional integrity	**NSI, PSI**	**NSI, PSI**	**RR, NSI, PSI**
14.	Holistic care		**RR, NSI**	
15.	Inter-professional working skills		**RR, NSI, PSI**	
16.	Complexity and uncertainty			**RR**
17.	Understanding team roles		**NSI, PSI**	
18.	Understanding own role		**NSI**	
19.	Information gathering			**NSI, PSI**
20.	Calm		**PSI**	**PSI**

Key:
RR = identified in rapid review
NSI = national stakeholder interviews
PSI = post-simulation interviews

4.1.2 RQ2: Preparedness for the changing doctor-patient relationship

The main ways the doctor-patient relationship was perceived to be changing related to; patients' increasing access to information, greater-shared decision making and a shift away from a paternalistic relationship between doctor and patient.

> *"I think that in the old fashioned models the doctor kind of instructed the patient and very much led the patient, but now I think more so the patient's having a lot more say in decision-making."*

These predictions were also reported in the Future Doctor report.[1] An important negative aspect of this change is that the more balanced dynamic and onus on patients to take part in their medical decisions sometimes resulted in increased patient expectations, a feeling of patients as consumers, and doctors pressured to facilitate patient demands rather than provide professional medical opinion.

> *"sometimes you do get people demanding investigations and things, and one patient I had demanded like quick treatment for their psychiatric condition, which we just couldn't offer and that can be quite frustrating"* (Interview 4, F1 Doctor, Male, England)

Foundation doctors' preparedness for the key aspects of the changing doctor-patient relationship are presented in Table 2. The data from our interviews with stakeholders suggest that graduates felt well prepared for communication and particularly building a rapport with patients. The Monrouxe et al. study reported that medical graduates were mostly thought to be prepared for straightforward communication with patients and their families and straightforward communication with medical colleagues [2] and this was corroborated by our findings. Our findings detail foundation doctors feeling less prepared for third-party communication, phone communication, and complex situations.

Our findings suggest that graduates felt well-prepared for patient-centred care. This finding also aligns with previous studies. [2, 3]

> *'I think very prepared,* ***my medical school training always put patients at the forefront of medicine****, we were taught in a sort of case-based way that always* ***centred around patient care, evidence-based practice and shared decision-making was emphasised a lot****, and I think that's something I've seen and hopefully carried through into my practice"* (Interview 16, F1 Doctor, Male, England)

In terms of fostering empowerment our data suggested mixed preparedness. While some respondents felt this was something they were prepared for, others felt that it was not something that foundation doctors had been provided the opportunity to gain experience in.

> *'there is a lot more of the old school approach where patients just refer to you as like you're the doctor and I'll do what you say doctor, and you're given that kind of responsibility to make the decision for the patient, which has it difficulties because*

you're trying to come to kind of a shared decision-making approach, whereas often the patients I've encountered particularly during my training so far have actually kind of like shirked away from that" (Interview 28, F2 Doctor, Male, Scotland)

Some of the respondents felt able to try to empower patients and were able to describe how they would go about this. For example, by ascertaining the level of understanding of the patient and how much they wanted to know and be involved in the decision-making, by presenting an unbiased explanation of the different options available, and their risks and benefits, and by having training in consenting patients.

"I think the thing I would try to do ultimately is get to know the patient on an individual basis, I think if I can ***get an understanding of how much the patient knows, how much they want to know, what their current level of understanding is, and how much they want to be involved in the decision-making****, that then sets the perfect kind of foundation for going forward with that patient's care, I think* ***taking that time to lay some foundation and groundwork of just getting to know the patient and a bit about them, [because] every patient will be different in how they're going to approach being involved in those decisions****"* (Interview 1, F1 Doctor, Female, England)

Interestingly, the Monrouxe et al. study did not identify fostering empowerment as a key skill, nor have there been any other studies on this area, thus our study makes a unique contribution to the literature in this respect. Often graduates felt prepared for the different aspects of the role of the foundation doctor but due to the pressures of the clinical environment did not have the time to execute these skills to the best of their ability.

Our findings suggest that overall, graduates are prepared for the changing doctor patient relationship but lack experience with fostering empowerment, and more complex communication.

Table 2: Preparedness for the changing doctor patient relationship

Changing doctor-patient relationship	National Stakeholder Interviews		
	Prepared	Unprepared	Mixed Preparedness
Communication	x		
Fostering empowerment			x
Patient-centred care	x		
Overall	x		

4.1.3 RQ3: Preparedness for working in MDTs

Foundation doctors felt very comfortable with working in MDTs and do so on a daily basis albeit in different formats depending on the trust and the specialty. Their role in the team varies but foundation doctors were typically seen as being a bridge, a liaison or a coordinator between patients and the rest of the MDT, responsible for organising aspects of care and carrying out key practical tasks and clinical skills.

> *"**I think often on the ward as a foundation doctor I'm quite commonly the bridge between the patient and the rest of the MDT**, I'm often that point of call for the pharmacists or the consultants or the nursing team, kind of just to coordinate the care, **I think I'm quite often that coordination between the MDT working on the wards, and I'm often the one to kind of make sure the patient is spoken for in amongst that team. And I think I feel like a bit of a coordinator most of the time**" (Interview 1, F1 Doctor, Female, England)*

Outcome 9 from Outcomes for Graduates states that:

> *"Newly qualified doctors must learn and work effectively within a multi-professional and multi-disciplinary team and across multiple care settings. This includes working face to face and through written and electronic means, and in a range of settings where patients receive care, including community, primary, secondary, mental health, specialist tertiary and social care settings and in patients' homes."*

On the whole our findings suggest that graduates felt well prepared for working in MDTs (Table 3). They felt well prepared for communication, MDTs led by other HCPs and understanding team hierarchies.

Our findings suggested mixed preparedness for understanding different team roles. While some felt that foundation doctors had a reasonably good understanding, much depended on the medical school training they had received, and how much they had been encouraged to work or train alongside other health professions.

> *"I think **you have to have a good understanding of the role of other members** of the MDT, I think **it's really important to know where certain roles remits begin and end, and knowing how to fully use people's skills** to formulate effective plans for patient care."* (Interview 16, F1 Doctor, Male, England)

> *"It's kind of recognising that you do all function within a team and really, the hospital doesn't run, … it can't run with only doctors, it can't run with only nurses, we've got to have everyone. So, it's kind of recognising the importance of the MDT and respecting, people for the role that they play and how they can help and what resources, you know, they can offer and what things, you know, you're going to have to go to somebody else for"* (Interview 59, Healthcare Professional, Female, England)

In particular faculty staff felt that at times the foundation doctors failed to recognise the skills and experience of others or conducted themselves with a superior attitude. Monrouxe et al. also reported mixed preparedness on this aspect, finding that participants talked about how unprepared they felt for multi-professional team-working as their medical school had given them very few experiences for learning about the different roles of the other HCPs. However, others reported that their medical school had prepared them well by educating them about the roles of the different healthcare practitioners they might be working with. [4] The findings from our study suggest that more inter-professional education during undergraduate training would improve graduates understanding of the different roles.

Respondents were mixed in their perception of foundation doctors' preparedness for leadership and followership, particularly for leadership, despite this being identified as a key skill required for effective MDT working, particularly during an acute, urgent or emergency situation. Many of the foundation doctors interviewed felt they were not prepared for leadership within an MDT environment and particularly in an acute situation. This was largely due to their junior status, and not being afforded the exposure to develop leadership in these settings.

> *'but if you're on the MET team (Medical Emergency Team) you're usually the one that's kind of gaining access, and if you're seeing a patient then that's a bit unwell, you're pretty much seeing them by yourself or with a nurse, and if there's any situation involved you usually call a registrar, which means that you cannot be the leader. Even if there's like an emergency on the ward, the times there has been, I think there's always been someone more senior about"* (Interview 72, F2 Doctor, Female, SW England)

Some of the foundation doctors interviewed felt more prepared for leadership due to their extracurricular activities that had helped to develop those skills.

When it came to followership, respondents were much more cohesive in their perception of foundation doctors' preparedness. Many of the interviewees felt that the current cohort of foundation doctors were well prepared for followership. The foundation doctors interviewed spoke of valuing the professional expertise and experience of others, but also recognised the need to be able to challenge or question decisions in certain situations.

> *"… as a foundation doctor you don't do leadership very often, you do a lot of followership, it would have been useful to think about that followership and how …to do that well, and how to challenge and ask questions when you're not sure that the right decisions are being made"* (Interview 12, F1 Doctor, Female, England)

Our study makes a contribution to the literature on graduates' preparedness for leadership and followership. While Monrouxe et al.[4] reported graduates felt unprepared for leadership,

followership was not explored. Leadership and followership is covered to some extent in Outcomes for Graduates. Outcome 8 deals with leadership and team working specifically:

> *"Newly qualified doctors must recognise the role of the doctors in contributing to the management and leadership of the health service"*

In terms of MDTs led by other HCPs, overall the respondents interviewed felt that foundation doctors are generally prepared for this. Many suggested that the foundation doctors were content to follow others and appreciated the guidance and expertise of others when they were clearly more appropriate to lead. The foundation doctors interviewed acknowledged that in many cases, nurses or other practitioners had several years of valuable experience which made them very knowledgeable.

> *"I guess nights and out of hours shifts where … nurses are the ones in charge, I think I actually found that transition quite straightforward, they're very competent, they've been doing it for a very long time, they know the hospital, they know how it runs, so I was very happy to take instruction from them and advice into how the out of hours shifts work"* (Interview 2, F1 Doctor, Female, Scotland)

This aspect was not explicitly explored in the Monrouxe et al. study however, it did report that graduates felt that working with other healthcare professionals, such as social workers, provided them with different ways of thinking and working and they most often cited nurses as key players who looked out for graduates due to their novice status. [2]

Table 3 Preparedness for working in MDTs

MDT	National Stakeholder Interviews			Post-simulation Interviews		
	Prepared	Unprepared	Mixed	Prepared	Unprepared	Mixed
Communication	x					
Understanding different team roles			x			x
Leadership and followership			x			x
MDTs lead by other HCPs	x					
Understanding team hierarchies	x					
Overall	x			x		

4.1.4 RQ4: Preparedness for complex clinical decision-making

It was felt by many stakeholders that graduates do not make complex clinical decisions and that this was beyond the remit of the role of the foundation doctor. However, others identified the following types of complex clinical decisions made by foundation doctors including those relating to co-morbidities and social problems, acute or time-pressured situations, end of life, DNR and discharge.

> *"To me it means a decision where you have to weigh up a lot of risks and benefits and balance a lot of different factors together, for example a bleeding risk and a clotting risk…"* (Interview 8, F1 Doctor, Male, England)

> *"patients with lots and lots of things going on, that sometimes there can be difficult family dynamics or social dynamics, there are often several teams involved, and coming to a decision with regard to treatment or not about specific aspects of their care"* (Interview, 14, F1 Doctor, Female, England)

Some trainers and faculty felt that foundation doctors did not make complex clinical decisions at all unless they were on on-call shifts or had a supporting role while the complex decision was actually made by senior colleagues. This divergence may reflect subjectivity over what counts as a complex decision.

> *"On a day job hardly any because there's always a consultant ward round and senior help, generally speaking, out of hours things do get a bit more complicated"*

Foundation doctors felt prepared for understanding their own knowledge and professional limits and knowing when to escalate (Table 4). There was mixed preparedness for dealing with uncertainty and prioritising tasks.

Dealing with complexity and uncertainty is specifically addressed in outcome 6 in Outcome for Graduates. [5]

> *"The nature of illness is complex and therefore the health care of many patients is complicated and uncertain. Newly qualified doctors must be able to recognise complexity and uncertainty. And, through the process of seeking support and help from colleagues, learn to develop confidence in managing these situations."*

Our data suggests that foundation doctors' preparedness for dealing with uncertainty was mixed. Some interviewees said they were well prepared for it while others were not. When faced with uncertainty, foundation doctors would seek help from their foundation colleagues, wider team or senior colleagues depending on the nature of the problem. They would also try to seek further information by talking with the patient, carers or families to gather more patient histories, or they would consult with established medical guidelines, protocols and research.

> *"whether that's from a textbook or from the team around me, I think you seek more until you're comfortable that you have enough information to make a decision, but also so it's knowing when to seek more information, when to gather advice, and knowing when to just say ok now we've just got to make a decision. We will never know everything, and we'll never be sure, so it's striking the perfect balance between knowing how long to seek information for and knowing at what point to just say ok now we give it our best guess"* (Interview 17, F1 Doctor, Female, England)

Brennan et al's [6] study revealed mixed responses to dealing with uncertainty. Participants encountered uncertainty in terms of what was expected of them as well as in terms of medical uncertainty about diagnosis and treatment. Similarly Monrouxe et al [2] reported that graduates spoke negatively about coping with uncertainty and change: uncertainty about their diagnoses, when seniors changed their minds and ethical issues. However, repeated exposure to these types of events led them to cope better.

Graduates reported feeling prepared for recognising their own knowledge and professional limits and knowing when to escalate decisions.

> *"I think I feel confident that I know when to escalate, and there is a lot of emphasis on if you're not sure then make sure you escalate. But I do think I've been very lucky in that I have had seniors who are very accepting of that and very willing to help, and I know that that has really encouraged me and helped me learn"* (Interview 12, F1 Doctor, Female, England)

This was also found in the Monrouxe et al. study with the exception that graduates felt unprepared for knowing when and how to escalate the situation to their seniors in medical emergencies.[4]

Out study reported mixed preparedness regarding prioritising tasks.

> *"So, they have to deal with competing demands, complex uncertainty, multiple healthcare needs for a patient, and knowing where to start…. you're in a ward and you've got some agency nurses, and they've got a locum consultant, you know, you have to build those relationships and how easy can you do that in a time pressured environment?"* (Interview 64, Medical Educator, Male, N. Ireland)

Monrouxe et al. reported graduates feeling less well prepared for this. Some of the foundation doctors reported having specific training in practising prioritisation, which was helpful, but many identified it as a skill that came quickly with experience in the job.

> *"we had someone who was on our ward who had bad kidney failure and went into septic shock, so we were pushing him full of fluid because he was septic and his kidneys weren't coping with it so the fluid was leaking to the wrong place, that's quite complex because it's acute, it's time-pressure, you don't really have long to think about what you're doing"* (Interview 18, F1 Doctor, Male, Scotland)

Table 4: Preparedness for complex clinical decision-making

Complex Clinical Decision Making	National Stakeholder Interviews			Post-Simulation Interviews		
	Prepared	Unprepared	Mixed Preparedness	Prepared	Unprepared	Mixed Preparedness
Communication	x					
Dealing with uncertainty			x			x
Knowing when to escalate decisions	x					
Understanding own knowledge & professional limits/Self awareness	x					
Prioritising tasks			x			
Overall			x			x

4.1.5 Limits of medical school preparation

It is clear from the data that there is only so much preparation that medical schools can provide for the role of foundation doctor; some aspects just have to be learned on the job. While taught skills are important and indeed essential it was strongly felt that the most effective way of being prepared for the Foundation Doctor role was to put the skills into real-life clinical practice.

> *"if I'm honest, I think it's, I think it really is just an issue with undergraduate training, it's not necessarily bad undergraduate training, I wouldn't say that at all, I think my undergraduate training was great, and I think you ultimately just have to learn certain skills doing the job, but I would also appreciate that our colleagues sometimes tend to get better training in terms of nursing colleagues who start off their education by working, so working through that assistantship style learning, in the hospitals, physician associates working in that, learning and working at the same time, that assistantship style learning and I think it's something that if it was introduced to medicine it would probably vastly improve those matters of education"* (Interview 24, F1 Doctor, Male, N. Ireland)

Whether this was through initiatives such as shadowing the F1/F2 roles, assistantships, induction programmes or the FiY1 programme, the more practise they had at carrying out the role, the more prepared they felt. It is only when the foundation doctor is responsible for the care of the patient and they are performing the role in reality that they fully appreciate the requirements of the role. In particular, complex clinical decision-making and

prioritising tasks were recognised as not something that could be taught in the classroom but needed to be developed over time and through exposure to clinical practice.

> *"… **one thing that was fantastic that happened with the pandemic was that doctors started in Northern Ireland earlier**, …they actually started work, and became part of the rota. **So there's a very different mindset when you're shadowing versus when you're actually employed and get paid and have responsibility. So, that was fantastic for them… yeah, so that's one thing that could certainly be improved**…. you could say that doing, I don't know, a paid internship, in other ways on the ward as a healthcare assistant would be very helpful for, medical students to do where they get, I don't know, do one month every year of where they actually **work on the ward as healthcare assistants would probably be beneficial for them and humbling, I think for a lot of the more privileged students**" (Interview 40, F2 Doctor, Male, N. Ireland)*

Monrouxe et al. also found that important aspects of becoming a doctor can only be learnt in the workplace while working as a trainee doctor such as responsibility, managing communication between consultants and other disciplines, and supporting time management and task prioritisation through building and reviewing a job list. [7]

A recently published report commissioned by the GMC on the work and wellbeing of FiY1 doctors during COVID-19 found that the FiY1 was a valuable experience for most who undertook it, adding value beyond undergraduate placements and assistantships.[8] In particular, FiY1 provides an 'apprenticeship' in the *responsibility* of being a doctor, but with fewer of the demands. Foundation doctors who had worked as FiY1s felt more prepared overall for starting F1 than those who had not been working since April 2020, as well as those who had worked in non-FiY1 clinical roles. Most importantly, they found that perceived preparedness was associated with the duration of an FiY1 post, with a period of several weeks necessary for a high probability that a trainee would feel prepared to start F1.

4.2 COVID-19 Context

The fact that this study took place during the COVID-19 pandemic in 2020, which put unprecedented pressure on the delivery of healthcare in the NHS, provided a unique context to investigate the preparedness of this cohort of graduates. The COVID-19 pandemic had both positive and negative implications for the three focus areas of practice. The positive effects reported included an enhanced use of technology, increased positive public perception of doctors, enhanced relations between doctors and patients, better knowledge of patients, better support amongst MDTs, an increased appreciation of the importance of the MDT and greater exposure to complex clinical decision making. The perceived negative effects included less clinical experience for foundation doctors, and therefore less interactions with patients and patients' families, depersonalised interactions because of PPE or remote consultations, delayed or disrupted treatment and complex decisions were made

even more complex. Despite the additional complexity of undertaking their foundation programme training during a global pandemic, graduates on the whole reported good levels of preparedness. This finding is something to be celebrated and indicates that current undergraduate medical education provision is adequately preparing doctors for unforeseen changes in healthcare needs.

An important issue that our study did not explore was the impact of the COVID-19 pandemic workplace conditions on the health and well-being of foundation doctors. Burford et al found that exposure to acutely ill and dying patients was associated with higher stress and burnout during FiY1 however by the time they started F1 there was no difference in wellbeing measures between those who did, and did not, do FiY1.[8] They also found that having been an FiY1 had a protective effect with regard to the risk of depression on starting F1. These findings support our argument that providing more experiential learning and programmes where medical students get to 'act up' to the role of the foundation doctor improves a doctors feeling of preparedness.

> *"**I think the most useful thing that I've seen, and I really hope you pick some of these people up in your study, is the people who started as interim F1s during the Covid redeployment, because from speaking to all of them they said they really appreciated that two month almost glide into F1 because at that point they picked up on all these practical life skills and bits that you just have to learn while also learning how to do the job and look after unwell patients**, whereas in a way when there's old F1s kicking around you have a safety net in which you can learn. **So I'm a big believer and advocate of making the shadowing period or allowing students the opportunity to start a month early, just so they can pick up on all this stuff and use that, I think that would be quite useful**. (Interview 31, F2 Doctor, Male, England)*

4.3 Different perceptions of preparedness

We identified areas where supervisors and faculty staff disagreed with new graduates in terms of their perceptions of preparedness for specific tasks. The most notable examples were around prioritising tasks, leadership and recognising professional limitations. Similarly, Monrouxe et al. identified clear contradictions in the literature regarding the level of self-reported preparedness compared with expert assessment of their skills whereby graduates rate themselves as more prepared than their seniors rate them. For example, this discrepancy was identified in assessing communication skills: while graduates rated themselves as prepared for breaking bad news and communicating with an MDT their experienced senior colleagues reported that this was not the case. Monrouxe et al. proposed that such an overestimation of preparedness could be an example of illusory superiority.[9]

4.4 National stakeholder interview vs post-simulation interviews

The national stakeholder interviews differed from the post-simulation interviews in a number of ways. Firstly, the aim of the post-simulation interviews was to explore graduates' preparedness for acute clinical scenarios whereas the national stakeholder interviews focused more on preparedness for all aspects of clinical practice. Secondly, the post-simulation interviews were carried out in a specific hospital trust in the South West of England whereas the national stakeholder interviews were carried out across the UK. Thirdly, the post-simulation interviews involved participants taking part in a simulation scenario, a structured debrief and completion of a CRM template reflecting on their preparedness for practice for the simulated acute scenario. The simulation sessions were mostly modelled around acute medical emergencies, with the exception of one focused more on complex care of an elderly person with multiple co-morbidities. Fourthly, the post-simulation interview schedule asked specific questions relating to teamworking and complex clinical decision-making within the high-fidelity simulated session.

Despite the clear differences in the purpose and methods of the national stakeholder interviews and post-simulation interviews, the results were similar. Thus we can conclude that the findings corroborate each other. The key skills, capabilities and attributes identified as being necessary for MDT working and complex clinical decision-making were the same with the addition of being calm for MDT working which would clearly be more important in acute scenarios. In terms of new graduates' preparedness for these skills, the findings from both interview phases were also very similar overall.

The post-simulation interviews did provide some additional understanding around the importance of closed-loop communication particularly within an acute or emergency setting, and the fact that foundation doctors are not yet prepared for leadership in acute scenarios and the challenges of MDT working and complex clinical decision-making in acute settings. Preparedness for practice in an acute ward setting is a relatively underexplored area of new graduates preparedness for practice. [10] Our approach using simulation, de-briefing and the completion of a CRM template followed by a semi-structured interview is a novel approach that has not been used previously to explore this topic and thus makes a valuable contribution to the literature in this respect. A literature review by Callaghan et al. reported how junior doctors are often the first doctor to be called to review patients in hospital wards whose clinical status has deteriorated. The factors that influence junior doctors' preparedness to recognise, respond and manage patient deterioration in acute ward settings are complex. A systematic review of the literature indicated that there is substantial room for improvement in junior doctors' capacity to deal with patient deterioration.[10] Similar to our study the Callaghan et al. study found that preparation of junior doctors in the recognition and management of the deteriorating patient is influenced by effective simulation education and clinical experiential exposure over time.

4.5 Strengths and limitations of the study

This study differs from many other preparedness studies in that it is exploring preparedness of recent graduates to meet future need and therefore what they need to know and do over their whole career across the three focus aspects of practice. This was a large national study covering all four nations in the UK, to investigate three key areas of practice which have been identified as being particularly important for junior doctors, both at the point of graduation and in their future careers. Combining national stakeholder interviews with the simulation work package in this study allowed in depth exploration of the three areas of practice, with methods which went beyond analysing the perceptions of trainees, trainers and other stakeholders. Including simulation scenarios at one site in the South West of England provided objective evaluations of multidisciplinary simulation faculty who witnessed how foundation doctors reacted to a number of acute simulation scenarios. The follow-up interview of trainees and trainers evaluated MDT working and complex clinical decision making in the context of acute and emergency care, which complemented the context of planned and elective care which was explored more with the national stakeholder interviews.

Interview schedules were devised following the rapid review of evidence related to the three areas of practice, ensuring that our research built upon existing work and theories around MDT working, complex decision making and the doctor-patient relationship. Coding the qualitative data separately for each work package meant that each work package would make an individual contribution to the study and added further weight to the overall results as the findings from WPC corroborated the findings of WPB and vice versa.

The study did not include a longitudinal research design but builds on similar work conducted by Monrouxe and colleagues in understanding preparedness for practice of foundation doctors. The simulation part of the study was only conducted one site, but this was a large tertiary referral centre which attracted Foundation doctors who had graduated from medical schools across the UK. We have made a major contribution to the literature to define the key skills and attributes required for complex clinical decision making, MDT working and the doctor patient relationship which has included perspectives and objective evaluations of multiple stakeholders including other HCPs and patients.

4.6 Potential impact of this research

This work was commissioned by the GMC and will likely inform standardised outcomes for graduates in the UK and domains assessed in the Clinical and Professional Skills Assessment (CPSA) element of the UK Medical Licensing Assessment. In particular, our work has helped to emphasise the need for graduates to be able to foster empowerment in patients as part of shared decision making and to become more comfortable making complex clinical decisions in acute situations, when there are limitations due to time pressure. Our findings will be relevant to Medical Schools and Foundation Schools planning clinical skills and simulation training as part of their curricula and national bodies such as GMC and HEE defining standards for these curricula.

This study has highlighted the fact that foundation doctors are not fully aware of the remit of other HCPs in the MDT. Furthermore, foundation doctors can find themselves making

complex clinical decisions out of hours when they work closely with other members of the MDT, with less direct supervision from their medical colleagues. The findings of our work will be pertinent to programmes looking to improve interprofessional education at undergraduate and postgraduate levels and for those responsible for planning supervision of foundation doctors.

A strong theme identified from this research is that undergraduate medical education needs to optimise the amount of practice based time in the lead up to the foundation role where many aspects of the role are best learned 'on the job' through assistantships, shadowing, interim foundation posts etc. Based on our data, foundation doctors would value shadowing other HCPs during this time and our work will help to inform the debate on the length and structure of these training periods in the transition to the foundation doctor role.

5. Conclusion

Our study adds to the preparedness for practice literature by providing an in-depth exploration of three areas of foundation doctors' practice that will be important to meet future anticipated healthcare needs. In particular, there are some aspects of preparedness that have not been explored in the literature previously, including empowering patients, leadership and followership, and MDTs led by other healthcare professionals. The current medical education provision is producing doctors that are prepared for many aspects of practice in these areas including, communication, patient centred care, MDTs led by other HCPs, understanding team hierarchies, knowing when to escalate decisions, understanding own knowledge, and self-awareness. Areas that need some more attention are complex clinical decision-making in acute settings, fostering empowerment, complex communication, dealing with uncertainty, leadership, and prioritising tasks; but these are skills that are learned on the job. Any future changes to medical education provision should focus on providing more experiential learning and programmes where medical students get to 'act up' to the role of the foundation doctor.

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