

# Does C21 prepare medical students for doctoring in foundation?

## A mixed-methods study

C4ME SUPPLEMENT

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**Background**

It is essential for Foundation Year 1 (FY1) doctors to be adequately prepared for practice to ensure delivery of safe and high-quality patient-centred care. The transition from student to doctor is known to be challenging due to an increase in responsibility, and working within a pressurised and stressful environment. (1) Preparedness is complicated further by the continual change in healthcare needs and diversity seen within the aging and co-morbid population, (2) which impacts upon the knowledge and skills required by newly qualified doctors.

The standards expected of newly-qualified doctors are outlined in the General Medical Council's 'Tomorrow's Doctors'; (3) a core curriculum by which competency can be measured. This publication generated momentum for curricula reform to address the issues relating to graduate preparedness; smoothing the transition to FY1 through adequate preparation for practice in regards to managing complexity and decision-making. In line with this, the 'Curriculum for the 21st century' (C21) at Cardiff Medical School was introduced in 2013: an integrated case-based learning spiral curriculum with early and continuous patient contact, and an emphasis on independent learning. (4)

Over the past 10 years there has been a large volume of qualitative and quantitative research assessing preparedness to practice, however C21 had not been evaluated in this context as the first cohort graduated in July 2018. Therefore, this study aimed to do so.

**Methods**

Self-perceptions of preparedness of Cardiff 2018 graduates working as FY1 doctors in the UK were evaluated. An invitation email and link to

the online questionnaire based upon 'Tomorrow's Doctors 2009', subdivided into 'Doctor as a Scholar and Scientist', 'Doctor as a Practitioner' and, 'Doctor as a Professional', was distributed through the Alumni network by Medical School administrators. Closed questions required selection of level of preparedness on a 5-point Likert Scale from 'very unprepared' to 'very prepared'. Open questions collected more detail regarding areas in which participants felt prepared and unprepared, and perceived difference between 'prepared' and 'very prepared' to understand subjectivity.

Semi-structured narrative interviews were conducted on a one-to-one basis with those who self-selected to be interviewed via the questionnaire. Interviewees told their personal stories of experience, enabling understanding of 'preparedness' within context, with detailed examples. (5)

Quantitative data underwent descriptive statistics, open-comments and interviews were analysed thematically. Interviews were also analysed narratively from a social constructionist perspective; to understand how interviewees conveyed their stories and why they did so, something influenced by social context. (6)

The Chair of School of Medicine Ethics Committee confirmed that ethical approval was not required and deemed this project a service evaluation. Research was conducted in line with ethical practice: participants received information about the project, their participation and data management. They were informed that confidentiality would be maintained unless an issue compromising patient safety was disclosed.

## Results

Of the 24 C21 graduates who responded, 88% agreed they felt prepared to practice resulting from C21. Regarding the 'Doctor as a Scholar and Scientist' 61% felt prepared, 82% regarding 'Doctor as a Practitioner', and 84% regarding 'Doctor as a Professional'. All respondents felt prepared to take a history and perform a physical examination and interpret the results from these.

From interviews (n=7), eight themes were identified with an additional two themes from open-comment survey data: definition of preparedness; being prepared and unprepared for practice; role of the medical degree in preparation; reflection of C21 and how to improve preparedness; assistantships; comparisons with other graduates and top tips. Throughout the narratives, the concept of preparedness was associated with level of knowledge. Most

interviewees recognised the difficulty in preparing students to practice, and in fact do not expect to feel fully prepared. Most interviewees discussed the imperative of 'practicing on the job' for preparation, correlating their level of preparedness with level of experience.

Most respondents felt prepared for communicating, team-work and clerking, which was attributed to patient contact and undergraduate placements. Practicalities of the role were prepared for through assistantships, which were valued by participants. However, they felt less prepared for night-shifts and on-calls, and other realities of work (e.g. level of responsibility, workload and working hours). Although 11 questionnaire respondents expressed feeling less prepared regarding scientific knowledge, three interviewees questioned the importance of detailed scientific knowledge within their FY1 role.

## Discussion

Most participants felt prepared for practice, following the trend that preparedness amongst graduates in the UK is increasing. (7, 8) However, evidently 'preparedness' is a complex and non-binary concept which develops with 'learning on the job'. (9)

The strengths in preparedness expressed by graduates in this project may reflect the emphasis that C21 places upon communication and team-working, which is reflected in literature concluding problem-based learning graduates felt better prepared than traditional graduates in this respect. (10)

The evaluation of C21 is a longitudinal study, and comparisons of cohort data with larger sample sizes may be used to inform changes to the C21 curriculum. Reflections expressed may be used to create a 'top tips' document or workshop. This could inform future final year students of the realities of practice, something difficult to relay through undergraduate placement.

It is understood this study is the first to analyse suggestions for improvement to medical curricula through narrative interviewing. Caution should be taken when interpreting results with regards responder bias. Nonetheless, this approach has provided insight to context of these FY1s' suggestions for changes to C21, through the provision of experiences for which these individuals felt unprepared, together with reflection of how they could have been better prepared to cope in that scenario.

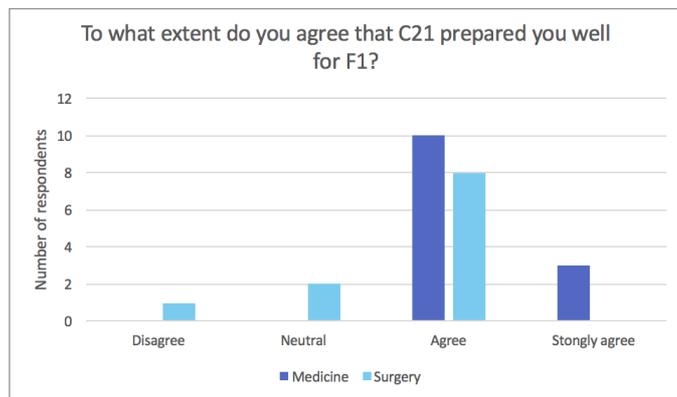


Figure 1: Graph representing agreement that C21 prepared them well for F1 according to their specialty

### Lessons Learnt

Designing and conducting a research project during a narrow time frame with minimal previous experience was challenging. Analysis of preparedness amongst medical graduates has been prolific over the past 10 years, hence I initially struggled to specify my literature search and generate research questions unique to my project.

I felt motivated to explore the opinions of Cardiff graduates when designing the questionnaire, and felt it important to unpick the reasons behind feelings of unpreparedness, as this could potentially contribute to easing the transition for future cohorts.

Although design and implementation of the questionnaire were successful, initially the response rate was disappointingly low. It seemed sparking the interest of FY1 doctors was more difficult than I had anticipated; I was concerned about possible impact upon my results and analysis. Upon reflection, low response was in part due to distribution through the Alumni network, as this relied on emails being live, thus we do not know how many were reached rendering it impossible to conduct a reliable response rate. Also, there was lack of awareness of the project and difficulty in attracting the attention of busy and perhaps stressed FY1s. I now recognise the importance of high levels of engagement with the population to ensure higher response rates. Going forwards, we plan to forewarn final year students before graduation and to recruit respondents face-to-face to increase engagement.

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