Abstract

**Background**: The transition from student to medical professional represents a major challenge for all medical students. Every intake of newly qualified doctors increases potential risks to patients. In the UK, this is often colloquially referred to as the 'August Effect'. At one District General Hospital, a 'Ward-Craft and Bleep Simulation Programme' was implemented for final year medical students. This aimed to equip students with the procedural knowledge and soft skills to support the transition from undergraduate training to professional working life as a junior doctor.

**Methods**: A series of six, weekly, two-hour workshops which focussed on common clinical problems encountered by newly qualified doctors was delivered to final year medical students ('Ward-Craft Programme'). Students then participated in a two-hour high fidelity, in-situ, 'Bleep Simulation Programme. The programme was facilitated by a Clinical Teaching Fellow and evaluated through an anonymous feedback survey.

**Results**: 98.9% of students (n=259) agreed, or strongly agreed, that the programme helped them feel more prepared and confident for life as a junior doctor. Participants provided overwhelmingly positive feedback, specifically noting that the programme addressed feelings of confusion, anxiety, and the feeling of being overwhelmed by the work of junior doctor.

**Conclusions**: The Ward-Craft and Bleep Simulation Programme has been positively received by medical students from universities with very different types of learning styles and courses. The replication of similar programmes for final year medical students is a valuable training opportunity for final year medical students and may help mitigate the challenges posed by the 'August effect'.

**Keywords**
changeover; ward-craft; soft skills; junior doctor; medical student
Introduction
Throughout the United Kingdom, final year medical students become, and start working as doctors, on the same day in early August each year. This is a potentially risky time for fellow professionals and patients as care is then provided by junior doctors who are less experienced than their predecessors. This situation may lead to unease amongst colleagues as some reports have suggested that it may compromise patient safety (Jaques, 2011; Vaughan et al., 2011). Some have postulated that this ‘August effect’ of increased morbidity and mortality could arise ‘through omissions, errors, failure to recognise deterioration, and poor task prioritisation skills’ (Blakey et al., 2013).

Since 2016, the number of new doctors in the UK who feel adequately prepared for practice has fallen by around 5%. In 2019, one in every eight trainees reported feeling unprepared for their first job as a doctor (General Medical Council, 2020; Royal College of Physicians, 2021). Training surveys reveal that new graduates can experience significant anxiety and feel ill-prepared at the transition from undergraduate training to postgraduate practice (GMC National Training Survey, 2022; Miles et al., 2017).

In response, some medical schools have included ‘apprenticeship models’ during the final year of undergraduate training which the Royal College of Physicians (2021) highlight as good practice to ‘support the development of “soft skills” and allow for a more supportive transition into working for the NHS’.

At one District General Hospital, we implemented a ‘Ward-Craft and Bleep Simulation Programme’ for final year students from the Universities of Oxford and Leicester. This equips students with the procedural knowledge and skills to increase their confidence and aids the transition from medical student to junior doctor.

Methods
Ethics
All participants provided written informed consent prior to participation in these teaching programmes. Northampton General Hospital NHS Trust confirmed that ethics approval was not required for this anonymized, observational, non-interventional study.

The Ward-Craft programme was a series of six, weekly, two-hour workshops. Group sizes ranged from 6 to 20 participants. The programme provided final year medical students with the opportunity to revise and consolidate important knowledge, skills, and professional attitudes. These were integrated through simulated, commonly encountered clinical scenarios in the form of case-based discussions and a workbook. The themes of the workshops were:

1. Infection and Antimicrobials
2. Haematology and Abnormal Blood Results
3. Prescribing and Symptom Management
4. Biochemistry and IV Fluid Management
5. Management of Diabetic Patients
6. Normal Working Day and On-Call Skills

The Ward-Craft programme culminated in a two-hour high fidelity, in-situ, ‘Bleep Simulation Programme’. This provided participants the opportunity to consolidate learning and further develop the non-technical and soft skills required of a junior doctor. A reflection and debrief was facilitated immediately after each session. The themes of teaching in the Bleep Simulation were:

1. Common Ward Tasks for the Junior Doctor
2. Management of the Critically Ill Patient
3. Clinical and Diagnostic Reasoning
4. Communication Skills and SBAR Handover
5. Appropriately Seeking Advice and Escalation
6. Prioritisation Skills
7. Prescribing Skills

From September 2021 to March 2022, 259 final year medical students from the Universities of Oxford and Leicester participated in the programme whilst on placement at Northampton General Hospital. The programme was facilitated by a Clinical Teaching Fellow and evaluated through an anonymous feedback survey. Participants were asked to rate their knowledge before and after the programme and to respond to the statements:

- ‘I believe that what I learnt in the Ward-Craft and Bleep Simulation Programme is important.’
- ‘I would highly recommend the Ward-Craft and Bleep Simulation Programme to other students.’
- ‘The Ward-Craft and Bleep Simulation Programme is helpful for my progress towards my end of year assessments.’
- ‘The Ward-Craft and Bleep Simulation Programme has helped me feel more prepared and confident in becoming a junior doctor.’

A free-text box was provided for any further comments.

Results
259 students participated in the programme. 100% of students agreed or strongly agreed that the programme was important. 99.6% of students agreed or strongly agreed that they would highly recommend the programme to other students. 99.3% of students agreed or strongly agreed that the programme was
helpful for progress towards end of year assessments. 98.9% of students agreed or strongly agreed that the programme helped them feel more prepared and confident in becoming a junior doctor (Figure 1).

Participants provided overwhelmingly positive feedback, specifically noting that the programme addressed feelings of confusion, anxiety, and the feeling of being overwhelmed by the work of junior doctor. They also reported that they would like more teaching like this during medical training. A selection of quotes from participants are presented in Figure 2.

Discussion
The design and delivery of this programme was influenced by the educational theory of Social Constructivism. This teaches that knowledge develops as a shared, rather than as an individual, experience.

Following these principles, the Clinical Fellow ensured that learning was relevant by facilitating, and guiding learning and discussion which took account of the interests and questions raised by students. Learning experiences and case-based discussions accommodated learner’s prior knowledge and opportunities were enhanced when based upon the output of group interactions. These group interactions were effectively designed to provide stimulating and complex, yet relevant, problems accessible to all the learners (for example, case-based discussions which incorporated prioritisation, communication, and knowledge-based problems).

The ability to reflect on experiences and adapt to unforeseen situations is central to work as a healthcare professional. Studies of many professional groups recognise the complexities which may be encountered when translating theory and technical knowledge into practice (Schon, 2011). Accordingly, time for ‘Reflection in Action’ was consciously built into the Ward Craft programme to help participants develop their own sense of professional artistry, or ‘practical wisdom’ (Ellett, 2012). Each workshop was scheduled to allow ‘Reflection-On-Action’ and in-depth examination of new experiences. This aimed to smoothen the transition from student to doctor. Participants consistently praised the relevance of the programme, stating that it fostered their preparation and confidence for life as a junior doctor.

Conclusion
The Ward-Craft and Bleep Simulation Programme has been positively received by medical students from universities with very different types of learning styles and courses. The replication of similar programmes for final year medical students as a part of the ‘Apprenticeship Model’, highlighted by the Royal College of Physician as ‘good practice’, is a valuable

Figure 1. Evaluation of Ward Craft and Bleep Simulation Programme.
“Thoroughly useful. Really tied in all the previous sessions together. Broad topics, very challenging in thinking on the spot. Please continue this series”

Male, Final Year Medical Student, University of Leicester

“Extremely high-quality teaching program very well delivered. Should be modelled for all blocks”

Female, Final Year Medical Student, University of Leicester

“This was super helpful! Essentially none of the content is delivered at university. Before taking part in the programme, I was very confused and overwhelmed about how to do the job day-to-day. The programme has been exactly what I needed right now”

Female, Final Year Medical Student, University of Oxford

“These sessions are extremely useful, thank you so much! I really like the case studies. They make me feel less confused and anxious about having to manage these situations in real life”

Female, Final Year Medical Student, University of Oxford

“This was an excellent programme that was really insightful into what awaits. It was great to be put into situations as an F1 and to have aspects to think about and improve on in the next few months before graduating. Very engaging and good feedback session”

Female, Final Year Medical Student, University of Oxford

“This was incredibly useful, practical experience to practice dealing with acutely unwell patients in a simulated environment. I would love to have this sort of teaching semi-regularly throughout clinical school as it provides practice at applying knowledge and skills”

Male, Final Year Medical Student, University of Oxford

Figure 2. Comments from Participants on the Programme.
support for newly qualified doctors and can mitigate the challenges posed by the ‘August effect’.

**Practice Points**
- The transition from student to medical professional represents a major challenge for all medical students.
- The availability of ‘Ward Craft and Bleep Simulation’ programmes, as described in the paper, is an invaluable training opportunity for final year medical students.
- Apprenticeship teaching of this type facilitates the transition from medical student to Foundation Year Doctor and may mitigate the ‘August effect’.

**Data availability**

**Underlying data**
B2Share: Ward Craft & Bleep Simulation Data http://doi.org/10.23728/b2share.1b9a268f4b6646aca185d72df3a5144d (Cunningham et al., 2022)

This project contains the following underlying data:
- WardCraft Data.xlsx (Feedback from participants in the Ward Craft and Bleep Simulation Programmes)

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

**References**


GMC National Training Survey. [Accessed 24 February 2022].


