Bleeding issue: a quality improvement project on the phlebotomy service at the Royal Devon and Exeter Hospital

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INTRODUCTION
Blood tests form an important part of a patient’s journey through hospital; they play a vital role in decision-making. At our large district general hospital (DGH), it was identified that proportion of blood tests requested to be taken by phlebotomists were not being done, this impacting on clinical decision making.

We conducted a quality improvement project to improve the proportion of blood results available to the medical team, in a timely manner to alter patient management during normal working hours.

Issues identified highlighted poor communication of failed venepuncture attempts between the phlebotomy team and the ward junior doctors.

METHODS
Data were collected on 24 consecutive weeks, on one medical and one surgical ward. Blood samples requested to be taken on the phlebotomy round were measured against the proportion of results published by 15:00. Our interventions designed included highlighting pre-existing communication methods between phlebotomists and junior doctors through a pre-existing WhatsApp group, introducing a new mechanism of communication via the ward clerk and publication of a flowchart of the new system.

RESULTS
The average number of patients for whom venepuncture was requested varied between the two wards, with the medical ward averaging 16.3 patients and the surgical ward averaging 19.1 patients per day. The mean number of results back by 15:00 over the total period on the medical ward was 86.34% (range 21%–100%) and on the surgical ward was 88.30% (range 59%–100%).

Prior to any intervention the successful proportion of bloods back by 15:00 was 84.85% and 87.96% for the medical and surgical wards, respectively. After the first intervention, surprisingly, these figures were lower at 83.92% and 84.93%. Following the second intervention the averages rose to 95.82% and 98.53%. Finally, after the third intervention the mean averages were 92.21% and 88.59%. There was no significant change in results identified at any point over the 24 weeks of data collection (figure 1).

DISCUSSION
While three interventions were attempted during our period of data collection, no intervention made a statistically significant change to the proportion of blood results available at 15:00. We hypothesise that this is due to three reasons: the inconsistencies in ward staff, the challenges of changing staff behaviour and the longer communication chain after our intervention.

Changing the action of a group, rather than individuals is therefore more likely to be successful.1 It is well known that changing the behaviour of staff in a healthcare setting can be challenging. For interventions to have the highest chance of success, guidelines and rules must be provided to an entire cohort of individuals, with reminders and audits following this. Our second intervention focused on changing the behaviour of the staff across the hospital but was reviewed on only two wards. While the information was given to all ward clerks and phlebotomists (intervention 3), it was not followed up with reminders. The second and third interventions meant that there were three separate staff members in a chain of communication. All team members need to be aware and motivated to partake in...
the project. If one part of that chain does not know how to enact the procedure, or is not motivated to do so, the system breaks down. For doctors and patients the benefit of a working system is obvious: doctors do not have to take bloods late in the day, and earlier clinical decisions are made for patients. However, for phlebotomists and ward clerks, a personal benefit is less tangible. It is perhaps more difficult to reliably change the behaviour of a group in which there is little personal benefit in doing so.

A further possible intervention focuses on improving of the phlebotomy service. The possibility of a second senior phlebotomist’s round was discussed, which may improve problems with patient availability or difficult venous access. Alternatively, altering the time of phlebotomy ward round, allowing senior clinicians to make decisions regarding which patients require blood test that day and thereby reducing the total number bloods ordered by junior doctors. Further training for phlebotomists in order for them to be able to take bloods from central lines and other bodily sites would also increase the number of results available.

CONCLUSION

While our three interventions were unsuccessful, the project did provide insight as to what interventions could work in the future. It is suggested that in order to improve the number of bloods taken, the focus needs to be on procedural change rather than simply encouraging better communication.

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