The Achilles Heel of Medicine: Improving Acute Medical Handover through Simulation

J. Siah1, A. Khaku1, A. Choudhury2 Barking, Havering and Redbridge University Hospitals NHS Trust, Essex, UK
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Introduction
Increasing shift work within the NHS has resulted in acute healthcare providers becoming more dependent on handover to ensure continuity and safer patient care (RCPP, 2011). The IPASS study showed implementation of a handoff-bundle involving an hour of simulation training, standardised documentation and a mnemonic reduces the rate of preventable adverse events by 30% (Starmer, et al.,2014).

Aim
Improve doctor’s ability to contribute to, lead and effect a change in clinical handover within their current specialty through a novel simulation-based handover course.

Methodology
We developed a one day simulation-based handover course to teach verbal and electronic handover using the core principles of simulation training: human factors and crisis resource management. The course was delivered twice in a London NHS Trust Simulation Centre for a total of 17 London trainees (foundation to registrar level). The candidate’s perception of handover and the course was collected via pre- and post-course questionnaires.

Simulation Day Template
Timetable for Handover Simulation Course.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td>8.30</td>
<td>Registration and completion of pre-course questionnaires</td>
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<tr>
<td>9.00</td>
<td>Co-creation structure of day, discussing importance of acute CM (junior doctors)</td>
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<tr>
<td>9.30</td>
<td>Simulation Scenario 1 (No handover framework given, Human factor, under-utilised site manager)</td>
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<tr>
<td>10.15</td>
<td>Simulation Scenario 2 (Limited handover framework given, Human factor, Misaligned junior doctor)</td>
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<tr>
<td>11.00</td>
<td>Coffee Break</td>
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<tr>
<td>11.30</td>
<td>Electronic Handover: Applying technology to improve the process (candidates given a computer workstation, a template and an electronic form)</td>
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<tr>
<td>12.00</td>
<td>Lunch</td>
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<tr>
<td>12.45</td>
<td>Handover Workshop (Candidates given a computer workstation to practice handovers on an electronic system)</td>
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<tr>
<td>13.15</td>
<td>Simulation Scenario 3 (Full framework given, Verbal tools, Electronic handover: Human factor, Disruption of meeting)</td>
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<tr>
<td>14.00</td>
<td>Simulation Scenario 4 (Full framework given, Verbal tools, Electronic handover: Human factor, Falling Clinical Leader of meeting)</td>
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<tr>
<td>15.00</td>
<td>Break</td>
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<tr>
<td>15.30</td>
<td>Leadership and Teamwork workshop (Small group discussion and workshop discussing leadership and how to meet positive change in their trust in relation to handover improvement)</td>
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<tr>
<td>16.00</td>
<td>The ACHilles Heel of Medicine: Handoffs in acute Medicine (candidates given a computer workstation to practice handovers on an electronic system)</td>
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<td>16.15</td>
<td>End of Course</td>
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Results: Pre and Post Course Questionnaires

Comparison of pre- and post-course questionnaires showed the majority of candidates felt more confident to contribute to (94%) and lead (85%) a handover meeting (figure 1B). Furthermore 58% of candidates felt more confident to effect a change in handover practice within their specialty (figure 3).

The post-course questionnaire revealed 100% of candidates agreed or strongly agreed that the knowledge they learnt would improve their clinical practice and patient care (figure 4).

Only one candidate was satisfied with their undergraduate teaching and exposure to handover and 100% believe that there is a role for both formal undergraduate and postgraduate handover training.

Results: Simulation Course Feedback

Learning objectives for simulation handover course were met with excellent feedback.

Conclusion
A simulation-based handover course can instil good medical practice through increasing the confidence of doctors to contribute to, lead and effect a change in clinical handover, improving service delivery and patient safety. Handover simulation can ensure doctors know how to handover patients with use of verbal handover tools and seamlessly integrating electronic solutions within handover.

Simulation can also be helpful for doctors to gain practice in managing and discussing a number of human factors and crisis management situations that can present in handover.

Future Work
Our work provides a valuable insight into the need for training in medical handover and how simulation training may be used to meet this competency. We recommend that undergraduate and postgraduate medical trainees should undergo simulation based learning in handover as part of their core preparation for practice and CPD. Clinical handover should be a key component of the acute core curriculum.

References

Contact Information
Dr Julian Siah
Dr Afshan Khaku
Dr Akil Choudhury
CT1 ACCS Anaesthetics
GP ST1 Consultant in Acute Internal Medicine and Respiratory Medicine
Queen’s Hospital
Barking, Havering and Redbridge University Hospitals NHS Trust.
Rom Valley Way, Romford.
Essex. RM7 0AG

Email: jess.ash@bartshealth.nhs.uk
afshan.khaku@gmail.com
akil.choudhury@bthospitals.nhs.uk