supporting these teaching sessions to form part of the weekly teaching plan. This involved a detailed discussion on their rationale and approach, including evaluation. We then identified the most suitable day and time in the week and ensured that the seminar room was available for these sessions to take place. We ensured that everyone had access to a chosen platform for these sessions which was either Zoom or Teams. The most important and difficult part of the whole process was to recruit volunteers to present at these teaching sessions. This involved a lot of negotiation with my colleagues and personally approaching them to decide on the preferred topic and date for them. Finally, each presenter ensured that they had a work-based assessment from their teaching session that they delivered. We also obtained written feedback from junior doctors.

**Results**
- Period of observation: Nov 2020–Feb 2021
- Total number of trainees who presented: 7/10
- No of possible sessions: 15
- No. of sessions that actually happened: 11
- No. of sessions supervised by consultants: 10 (of 11 possible)
- WBA obtained: 11 (11)
- Reasons for non-delivery of sessions: increased workload and department being busy on the day; non-availability of seminar room; technical difficulties with the computer; and non-availability of presenter

**Conclusions**
1. These sessions improved participation of junior doctors in teaching.
2. These sessions improved social interaction amongst colleagues as they participated in discussions during these sessions and were able to join them remotely.
3. This was an idea that was welcomed by all, including the ANPs.
4. Trainees found these sessions to be useful; going forwards, they would like these sessions to be tailored to our curricula.
5. Despite many factors had the potential to interfere with the delivery of the sessions, the majority took place.

In this introductory 4-month period these sessions have received positive feedback and they will be embedded in the weekly teaching plan for future trainees joining the department.

**International Child Health Group**

**USABILITY-FOCUSED DEVELOPMENT OF A NEONATAL FEEDBACK DASHBOARD FOR A LOW-RESOURCE NEONATAL UNIT, MALAWI**

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<thead>
<tr>
<th>1</th>
<th>Caroline Crehan</th>
<th>2</th>
<th>Yamikani Mguha</th>
<th>3</th>
<th>Tim Hull-Bailey</th>
<th>4</th>
<th>Charles Normand</th>
<th>5</th>
<th>Farah Shair</th>
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<tbody>
<tr>
<td>6</td>
<td>Fabiana Lorenzatto</td>
<td>7</td>
<td>Mandeepn Chime-Kayuni</td>
<td>8</td>
<td>Yali Sassoon</td>
<td>9</td>
<td>Felicity Fitzgerald</td>
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<td>Monica Lakanpaul</td>
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<td>12</td>
<td>UCL</td>
<td>13</td>
<td>Paediatric Department, Kamuzu Central Hospital, Lilongwe, Malawi</td>
<td>14</td>
<td>Great Ormond Street Hospital Institute for Child Health, Population Policy and Practice department, University College London, UK</td>
<td>15</td>
<td>Spinsire Ltd.</td>
<td>16</td>
<td>Royal College of Science, Imperial College London</td>
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**Objectives** To develop a first working prototype of the NeoTree dashboard and then gather usability feedback regarding this prototype to develop a beta version referred to as a Minimum Viable Product (MVP-1).

**Methods** Over a seven-month period Microsoft Excel and then Power BI were used to co-develop and user-test a first prototype dashboard, visualising data collected by nurses on the NeoTree app on bedside tablet devices at Kamuzu Central Hospital Neonatal Unit. Data were exported from the app to a cloud database in Amazon Web Service via a WIFI network. The first prototype was co-designed with neonatal health professionals, during scoping meetings with front-line nurses (micro-level), senior department managers (meso-level) and Ministry of Health experts (macro-level stakeholders). Theory and evidence from current behaviour change and implementation science were mapped onto the dashboard. The first prototype was then user-tested with frontline neonatal nursing staff during one-to-one, video-recorded, usability sessions following think-aloud interview methods. System usability scores were collected from the same nurses. Rapid insights and inductive themes from thematic analysis of usability session transcripts informed dashboard changes. Iterative changes were also made to the dashboard while it was used at six morbidity and mortality (M&M) meetings and was played live on the ward screen for one-month.

**Results** Twenty micro-level, nine meso-level and two macro-level participants attended scoping meetings. Twenty-three evidence-based feedback characteristics and six behaviour change techniques from Control Theory were mapped onto the dashboard. Ten frontline neonatal staff attended usability sessions, and fifty staff used the dashboard in M&M meetings and live on the ward. Eleven rapid insights included; data visualisations should reflect local understanding of colours and use locally appropriate language. Eight inductively generated themes included; difficulty interpreting complex charts, data alone are not useful, tendency to focus on extremes of graphs and positive interpretation of data. Nurses were motivated to change when data were accompanied by specific feedback characteristics such as take-home messages, standards, goals and recommendations. Mean system usability score of the NeoTree system including the dashboard, was high (89.3/100).

**Conclusions** Electronic Audit and Feedback dashboards for neonatal nurses can be highly usable in low-income countries. Usability of dashboards can be enhanced by clear messaging of how to change practice in response to feedback. This study substantiates previous electronic audit and feedback evidence from high-income countries, spearheads usability-focused approaches to dashboard development and could support dashboard-driven quality improvement in similar settings.

**Background** Neonatal mortality remains high in low-income countries; 22/1000 in Malawi. The World Health Organisation has called for actionable information systems to monitor and impact and outcomes. Electronic Audit and Feedback dashboards are an increasingly used healthcare quality improvement strategy which summarise clinical practice over a specified time period and feed information back to clinicians, via graphs and data visualisations. Audit and feedback dashboards have had limited previous use in low-resource hospitals. ‘NeoTree’ is a digital newborn quality improvement platform currently under development, that provides electronic audit and feedback. This study aimed to apply a usability-focused approach to co-developing the dashboard component of the NeoTree system in Kamuzu Central Hospital, Malawi.