Human error is the leading cause of critical incidents in the operating theatre. One approach to reducing human error has been to develop role specific taxonomies of Non-Technical Skills (NTS) which have been used for training, understanding performance and research. Examples include systems for anaesthetists (ANTS) , surgeons (NOTSS) and scrub practitioners (SPLINTS) , but not yet for the Anaesthetic Nurses and ODPs who assist anaesthetists in the operating theatre. A task analysis was performed to identify relevant NTS using interviews with anaesthetic assistants and anaesthetists, as well as a review of the Australian Incident Monitoring System database for the contribution of NTS to critical incidents. The system was then developed with focus group interviews and a subject matter expert Delphi questionnaire. This study aimed to assess the reliability, validity and usability of the prototype ANTS-AP system.

METHODS
Ethical approval was gained from Aberdeen University (PEC 0108131886), and confirmation of exemption by West of Scotland NHS Research Ethics Service. Simulated theatre cases were filmed at the Scottish Clinical Simulation Centre to illustrate differing examples of NTS (Situation awareness (SA), Team working (TW) and Task management (TM)). At least 45 Anaesthetic Nurses and ODPs with at least one year’s experience working in NHS hospitals were to be recruited for 80% power with 5% significance. They were given access to an on-line introduction to human factors to increase their appreciation of human factors prior to attending a half day workshop. A separate video clip was used for orientation to the ANTS-AP system, and then they individually scored 12 video clips. After watching the videos, the participants were asked to rate the ease of use of the system, its completeness and suggest any potential alterations. Statistical analysis was performed using SPSS(v22).

RESULTS
80 individuals expressed an interest in the study, and 58 attended workshops, with 48 available for analysis (8 forms incomplete, 1 incorrectly scored, 1 too inexperienced). There was good internal consistency for the elements with the categories (Cronbach’s alpha), but only weak to fair inter-rater reliability (ICC), test retest reliability (ICC) and accuracy (weighted kappa) compared to the authors rating. The exploratory factor analysis suggested that the items all formed one construct. The system was generally considered complete, and straightforward to use.

DISCUSSION
The ANTS-AP system was generally received enthusiastically. The training the participants received was very short and some of the candidates had limited awareness or appreciation of human factors and non-technical skills, so the modest scores for reliability are not unexpected. The detailed results will be written up in a future publication. The system will need further investigation if it is to be used for assessment.

REFERENCES

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