reported as a useful and safe technique in young children with CF, but it is not yet widely used.

Hypothesis

As part of a quality improvement initiative, we hypothesised that SI would reduce the need for BAL in school-aged CF children with deteriorating lung function and no significant bacterial growth on CS.

Methods After CS and bronchodilator, 7% hypertonic saline was nebulised via an ultrasonic Ultraneb (DeVilbiss Healthcare) for 15 min. Spirometry was performed pre, post and at 5 min intervals throughout. Sputum was collected at 5 min intervals, and at the end of the procedure physiotherapy was performed to collect more sputum. If a child was unable to expectorate then a CS or oropharyngeal (OP) suction was performed.

Results 39 children (41% male), median age 11 years (range 5–16 years), median FEV₁ 85% (range 39–112%) performed SI from June 2012 to July 2014. Significant bronchoconstriction occurred in 11%. 2 adverse events occurred (vomiting and dizziness). The procedure took a mean of 90 min including equipment set up and cleaning.

34/39 (87%) expectorated a sputum sample of which 15 (38.5%) had a positive bacterial culture; only 3 of these patients (20%) grew the same organism on the preceding CS. Five patients avoided planned BAL due to a positive SI result and 2 avoided an admission for intravenous antibiotics.

Conclusion SI is well tolerated in the majority of school-aged children with CF. It has a higher rate of positive bacterial culture than same-day CS and, in this cohort, avoided the need for bronchoscopy in a significant proportion. It is a time-consuming procedure, but based on these data, we consider that establishing SI as a clinical procedure will be a priority for our service.

Integrated knowledge in practice

P107 KNOWLEDGE OF NON INVASIVE VENTILATION IN A DISTRICT GENERAL HOSPITAL – A CAUSE FOR CONCERN?

RC Jones, A Stanton, M Juniper. *Great Western Hospitals NHS Foundation Trust, Swindon, UK*

10.1136/thoraxjnl-2014-206260.248

Introduction Non Invasive Ventilation (NIV) is being used more widely in acute areas by medical staff with varied training and experience in initiation and ongoing management of ventilatory failure.

Aims To investigate doctors' knowledge of NIV in an emergency department (ED) and general medical wards, specifically indications for use, appropriate set up and ongoing care.

Methods An anonymous online and written questionnaire was distributed to all doctors working in general medicine and in the ED at a UK district general hospital in Spring 2014. Participants were asked to identify appropriate indications for NIV and then led through a scenario of managing a patient with COPD and decompensated ventilatory failure.

Results 40/116 (34%) of doctors responded across all grades. On a 6-point scale, self-identified confidence in managing NIV improves with seniority (5.2 (ST3+) vs 3.3 (FY1-ST2)) and past job experience in ICU (4.1 vs 3.6). Doctors were unclear about indications for NIV outside ICU/HDU. Whilst the majority

(95%) correctly identified COPD exacerbations as an indicator, doctors at all grades would also use NIV for: asthma (10%), significant hypoxia (10%) and pneumothorax (3%). A fifth (18%) would start NIV without initial medical therapy. Only 55% (22/40) could identify appropriate initial ventilatory pressures (initial IPAP range 4–16, initial EPAP range 4–16). Suggesting a value for back up rate was more problematic with 43% (17/40) unable to provide any value and 9/23 (39%) suggesting an inappropriate value (range 8–18). Only 55% (22/40) could correctly alter settings while 23% (9/40) of doctors altered both IPAP and EPAP by equal amounts. 50% (4/8) ED/medical registrars could not alter settings correctly.

Conclusions Knowledge of appropriate use of NIV is sub optimal across all grades working in the ED and general medicine in our institution, and probably reflects the increasing use of a specialist intervention in the hands of non-specialists. There are a number of doctors whose use of NIV could compromise patient safety. Urgent education across all grades is needed alongside review of how NIV is delivered in the DGH setting.

P108 ACUTE NIV PRACTICES AT A DISTRICT GENERAL HOSPITAL AND THE IMPACT OF REGULAR ELECTRONIC FEEDBACK ON PATIENT OUTCOME

TJC Ward, VW Sandoo, SF Hussain. *Kettering General Hospital NHS Foundation Trust, Kettering, UK*

10.1136/thoraxjnl-2014-206260.249

Background Non-invasive ventilation (NIV) has become the standard of care for management of acute type 2 respiratory failure. There is evidence that junior doctors receive inadequate training and confidence in the use of NIV is low. National audits have shown consistent shortcomings in NIV management.

Aims To assess initiation of acute NIV in a District General Hospital setting, to provide prompt structured feedback to doctors initiating NIV and to assess whether feedback leads to improvement.

Methods A total of 72 acute NIV initiations were prospectively assessed between January and June 2014. Data from patient records was collected using a structured pro-forma to assess nine parameters (described below). A feedback email with total score out of nine along with brief written feedback was sent to all doctors initiating NIV.

Results Performance was reported for each of the nine criteria; documented indication for NIV (94%); documented NIV start time (90%); BTS recommended NIV pressures achieved (61%); ABG immediately prior to therapy (93%); ABG performed at 1–2 h (75%) and at 4–6 h (79%); documented ceiling of treatment (70%) and discussion with patient/relatives (67%); improvement in pH at 6 h (58%). Use of correct pressures led to an improvement in pH in 68% compared to 43% when inadequate pressures were used ($p < 0.05$). pH at 6 h improved in 81% when all initial 8 parameters were met compared to 0% with a score of 4 or less ($p < 0.01$). There was a trend towards increased survival with higher scores.

Scores steadily improved over the first 3 months however fell at the beginning of April, coinciding with the rotation of junior doctors, rising again towards the end of the study period.

Conclusion Better adherence with BTS guidelines led to improvements in patient outcomes. Structured feedback led to improvement in NIV initiation scores.

Figure 1 - Rolling average of last 6 scores - total out of 9 parameters assessed

Abstract P108 Figure 1 Rolling average of last 6 scores – total out of 9 parameters assessed

P109 CAN A THEORY-INFORMED INTERACTIVE ANIMATION INCREASE INTENTIONS TO ENGAGE IN PHYSICAL ACTIVITY IN YOUNG PEOPLE WITH ASTHMA?

¹G Hoskins, ¹B Williams, ²J Murray, ¹S Skar, ³J McGhee, ⁴D Gauld, ⁵G Brown, ⁶S Treweek, ⁷F Sniehotta, ⁸L Cameron, ⁹A Sheikh, ¹⁰S Hagen. ¹University of Stirling, Stirling, Scotland, UK; ²Edinburgh Napier University, Edinburgh, Scotland, UK; ³University of New South Wales, Sydney, Australia; ⁴University of Dundee, Dundee, Scotland, UK; ⁵Asthma UK Scotland, Edinburgh, Scotland, UK; ⁶University of Aberdeen, Aberdeen, Scotland, UK; ⁷University of Newcastle, Newcastle, England, UK; ⁸University of California Merced, California, USA; ⁹University of Edinburgh, Edinburgh, Scotland, UK; ¹⁰Glasgow Caledonian University, Glasgow, Scotland, UK

10.1136/thoraxjnl-2014-206260.250

Background Participation in regular physical activity improves aerobic fitness and well-being. For people with asthma the benefits also include reduced hospital admissions, absenteeism, medication use, and improved ability to cope with the disease. However, although people with asthma can exercise safely, children and young people with asthma are less likely to be physically active than their peers. Integrating the principles of user-centred design and the MRC Framework for Complex interventions a theoretically-informed interactive animation was developed to encourage young people aged 12–18 years with asthma to engage in physical activity.

Methods A mixed-methods two stage approach was used. In stage 1 a user group (young people with asthma, parents, health professionals) used online consultation and discussion methods to inform the development of the intervention in a highly iterative manner (modelling). The theoretical basis for the intervention was then refined and converted into a 3D animation with accompanying action plan and volitional help sheet. In stage 2 a web-based Interactive Modelling Experiment evaluated effectiveness in three key areas: knowledge about asthma, inhaler use, and intention to increase physical activity. One-to-one interviews and focus groups were used to evaluate the acceptability of the animation and whether the theoretical basis was effective.

Results Twenty three people were recruited to the user group. Facilitated by multiple online consultation methods the group was highly engaged throughout. Fifty-three individuals were randomised online to receive the intervention or control; 26 completed follow-up questionnaires (49%). The pilot online

experiment supported the evidence base for the intervention but demonstrated that recruitment methods and loss to follow-up need addressed before a future trial. Though not powered to detect an effect on intentions and behaviour, the study revealed an impact on intentions to be active (increase) and on safe inhaler use (decrease). Qualitative feedback was positive across all groups, the intervention being well received and regarded as understandable, meaningful, engaging and potentially very useful within an asthma review.

Conclusion We have developed a high quality, two part intervention regarded as meaningful, acceptable and potentially useful. Future work is needed to establish whether acceptability levels and perceived effectiveness translate into behaviour change.

P110 EXPOSURE TO COMMUNITY COPD DURING SPECIALTY TRAINING

¹GH Jones, ²A Collins, ¹S Sibley, ¹D Wat, ¹MJ Walshaw. ¹Liverpool Heart and Chest Hospital, Liverpool, UK; ²Royal Liverpool and Broadgreen University Hospital, Liverpool, UK

10.1136/thoraxjnl-2014-206260.251

Introduction There has been an exponential growth in Community COPD care delivered by respiratory consultants in the last 5 years. Despite this rapid expansion, little is known about trainees' exposure to these services even though a proportion of them will go on to work in or set up such posts after completing their training.

Methods We conducted a national survey of respiratory trainees to assess their views and experience of Community COPD, including the commissioning process which forms an integral part of establishing such services.

Results We obtained 59 responses from trainees in 12 different regions (including all four home nations): 17% less than full time (LTFT), 81% ST5+, and 53% female. Despite the majority (64%) being aware of an expansion in services locally over 86% had no experience of Community COPD and most (75%) had no direct involvement in the commissioning process. Unsurprisingly, over three quarters felt their exposure to Community COPD services during specialty training was inadequate.

Of 8 who had attended Community COPD clinics, 7 had to organise ad hoc sessions themselves. Some trainees perceived a reluctance to facilitate formal training opportunities due to hospital service delivery requirements or a concern that community services were commissioned to be consultant-delivered.

While over 22% of respondents stated that they would not apply for a consultant post that included any community COPD sessions, this did not include any LTFT trainees and this group were also more likely to consider a job wholly based in the community [50% vs. 27%].

Discussion This survey suggests that most respiratory trainees, especially those in LTFT, would be willing to work in Community COPD roles as consultants, but are struggling to obtain adequate experience during training. It is envisaged that there will be further expansion of community respiratory services to improve patient access and to facilitate integration between primary and secondary care in the future. We suggest that training programme directors consider making experience of Community COPD a formal requirement and that the curriculum is updated to better reflect the needs of trainees.