Change in ease of:	3.33(1.24)	N/A
•Prescribing	3.26(0.9)	4.26(0.86)
•Administering		
Since new guideline		
(1=Much harder–5=Much easier)		
Desired improvement in drug chart	44.4%	40.7%
Desire for merged drug and observation chart	85.2%	59.3%
Adoption:		
Believe they apply guidelines in their daily practice	3.93 (0.62)	4.44
(1=Never–5=Always)		(0.64)
Adherence:		
Most frequently cited barriers to guideline adherence:	33.3%	16%
•Habit	20.8%	8%
•Too many policies	16.7%	4%
•Used to treat breathlessness	8.3%	0%
•Not my responsibility	4.2%	40%
•Lack of familiarity with guidelines	4.2%	0%
•Guidelines are unclear	4.2%	0%
•Guidelines not enforced	4.2%	0%
•Drug chart confusing	4.2%	0%
•Oxygen is not interesting	0%	8%
•Lack of understanding of rationale behind guidelines	0%	12%
•Lack of training	0%	12%
•Practical/Logistical difficulties		
Suggested measures to improve adherence:	23.4%	33.8%
•Teaching behind rationale	21.3%	22.5%
•General teaching	17%	16.9%
•Reminders	14.9%	16.9%
•Increased monitoring	10.7%	5.6%
•Individual penalties	4.3%	2.8%
•Trust penalties	8.5%	1.4%
•Other		

documentation and training) our performance in the BTS annual Emergency Oxygen Audit has failed to improve, in line with national findings, with only 56% of oxygen prescribed, none signed for and 66.7% outside the target range at the most recent audit. Our aim was to investigate the reasons underlying this.

Methods A link to an online survey was emailed to all junior doctors and nursing staff on hospital mailing lists. The survey was designed to utilise Pathman's four stages of guideline compliance (awareness, agreement, adoption and adherence) (1).

Results Results are summarised in Table 1.

Free text comments focussed on a desire by both doctors and nurses for the prescription chart to be clearer and to be located in a more prominent area of the drug chart, whilst doctors were concerned their prescriptions were not followed, nurses commented that doctors frequently failed to prescribe oxygen correctly, if at all.

Discussion Responders reported good levels of awareness, agreement and adoption, yet adherence, as measured by audit, performance in prescribing and administration scenarios and an inability to locate guidelines on the Trust intranet would suggest that further intervention is required. The high level of belief that their own application of the guidelines, by both medical and nursing staff, is good would suggest that either this self-selected cohort perform better than their less interested peers or that lack of awareness, so called "unconscious incompetence"(2), is a concern. Generally the desire is for yet more training, however, our concern remains that this has limited effect and systems need to be strengthened to improve oxygen prescribing and administration.

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P66 OXYGEN, TOO MUCH OF A GOOD THING - CAN WE SAVE LIVES USING A NOVEL SIMULATION?

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Introduction Delivery of high-flow oxygen therapy (OT) to patients experiencing acute exacerbations of COPD can result in respiratory acidosis and hypercapnic respiratory failure, significantly increasing morbidity and mortality rates. [1] BTS guidelines recommend that severe AECOPD should be managed with OT delivered at 4L/min using a 28% Venturi mask with target oxygen saturations of 88–92%. Literature suggests these guidelines are poorly adhered to due to long-standing routines and desire to rapidly correct hypoxia. [1]

Aim Develop a model of AECOPD using the Human Patient Simulator (HPS) demonstrating the dangers of high-flow OT and the advantages of titrated OT. This could be used in the education of healthcare professionals promoting awareness of the risks and improving adherence to BTS guidelines ultimately reducing unnecessary morbidity and mortality.

Methods Creation of the AECOPD model was achieved through parameter manipulation within the HPS software. Target values for P_aO_2, P_aCO_2, respiratory rate and pH were sourced from average recorded measurements of 405 patients experiencing AECOPD found in the literature. [1] On administration of high-flow oxygen additional parameters were altered to model the resultant hypercapnic respiratory failure.

Results An accurate model of AECOPD was achieved producing values reflective of literature: P_aO_2 53 mmHg, P_aCO_2 54 mmHg, S_pO_2 84% and pH 7.34. Manipulation of additional software parameters on administration of high-flow oxygen demonstrated the rapid onset of hypercapnic respiratory failure, with P_aCO_2 increasing to 102 mmHg and pH falling to 6.98. In comparison, on 28% oxygen administration P_aCO_2 rose only to 50.6 mmHg and pH to 7.39, whilst P_aO_2 increased to levels seen in stable COPD (61 mmHg).

Conclusion These findings demonstrate that the HPS can be used to accurately demonstrate the risks of high flow OT in AECOPD. The model created here has the potential to be an excellent educational tool, which could be used to improve adherence to the evidence based guidelines and potentially reduce patient morbidity and mortality in the future.

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P67 ELECTRONIC PRESCRIBING ALERTS SIGNIFICANTLY INCREASE OXYGEN PRESCRIBING

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Introduction In 2011, the number of patients using oxygen without a prescription within a teaching hospital in the West Midlands was higher than the national average (local 11.3% vs

national 7.1%). Following this, an electronic alert was incorporated into a bespoke prescribing system to remind doctors to prescribe oxygen. This alert was triggered whenever the oxygen saturations of a patient were recorded on supplemental oxygen without an oxygen prescription.

Method Data was collected using the standard BTS oxygen prescribing audit proforma in October 2011 and October 2012. In 2012, 215 patients from six medical and respiratory wards were included; 40 were on supplemental oxygen. We used Fisher exact test to analyse our data.

Results The number of patients using oxygen with a valid prescription increased significantly from 42.9% in 2011 to 72.5% in 2012 ($p = 0.023$). The national average for oxygen prescriptions in 2012 was 52.3%. Oxygen is being signed for on drug round s more often, 64.1% of the time compared with 13.5% the previous year. Despite the number of oxygen prescriptions increasing significantly, the proportion of patients with saturations in their target range actually decreased.

Conclusions The number of oxygen prescriptions have increased significantly with the introduction of an electronic alert system. Potential development s for the future would include an automatic prescription with 'opt out' facility and an alert for nursing staff when oxygen saturations are out of range to allow better titration of oxygen. This study shows that use of information technology and prescribing alerts and reminders can have a significant effect on number of prescriptions. What remains to be seen is if this will have an effect on patient outcomes.

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P68 CONVENTIONAL AND INTERVENTIONAL BRONCHOSCOPY TRAINEE PRACTICE AND CHALLENGES

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Introduction Bronchoscopy, an integral skill for respiratory registrar training, has been challenged by changing work patterns. Exposure to interventional bronchoscopy has posed further challenges to trainees.

Objective To assess if UK respiratory trainee bronchoscopy practice and skills are in keeping with guidelines and whether their curriculum is being adhered to. We also gauged trainee attitudes and exposure to interventional bronchoscopy.

Methods A survey was designed by us to assess training opportunities, exposure, competency and practice in conventional bronchoscopy with a section dedicated to interventional bronchoscopy. This was piloted locally then expanded nationally with 15 deaneries participating.

Results 144 replies represented 24% of potential survey recipients. 13% had bronchoscopy experience outside specialist training such as fellowships or overseas experience.

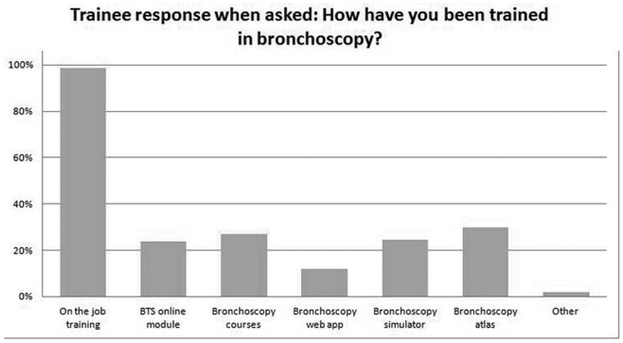
53% were scheduled to attend bronchoscopy lists at least weekly although 27% achieved this (mainly due to on-call commitments). Just 70% of trainees had performed >200 bronchoscopies by their final training year. 97% kept a logbook, though only 62% recorded *'hit-rates'*.

More scope via nose than mouth (53% vs 14%) and from the front than behind (44% vs 15%). Most right-handed (68%) and left-handed (73%) trainees preferred handling the control-lever with their dominant hand, 58% were influenced by their first trainer. 98% used midazolam and 52% opioids for sedation with 8% routinely using no sedation. Trainees tend use midazolam rather than opioids first when using both (61% vs 24%).

By the final year of training, not everyone was completely independent with common diagnostic procedures, e.g. only 30% were for transbronchial biopsy. Almost all were trained on-the-job (figure). 62% of trainees rated flexible bronchoscopy training *excellent* or *good*.

Unfortunately most interventional bronchoscopy techniques weren't experienced by the vast majority. Only TBNA (36%) and EBUS-TBNA (22%) were performed by significant numbers of trainees. 24% had a definite interest in interventional bronchoscopy and of those 54% rated training *poor* or *very poor*.

Discussion The results have highlighted bronchoscopy training deficiencies and a substantial number of trainee's desire for exposure to interventional bronchoscopy techniques. Using e-portfolio akin to that already used for endoscopy and creating separate training pathways for interventional bronchoscopy may help in remedying this.



Abstract P68 Figure 1.

P69 THE USE OF ASSESSMENT IN THE DELIVERY OF BRONCHOSCOPY SIMULATION- ARE SKILLS RETAINED AT ASSESSMENT?

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Introduction Bronchoscopy simulation is becoming increasingly used as a tool to improve the confidence and knowledge of trainees, with the intention of increasing the speed of skill acquisition. Although this training has been shown to be effective, little research has been conducted into whether retention of skills occurs. Health Education Yorkshire and The Humber (HEYH) previously designed a mandatory programme to support the education of trainees and this has been extended to involve Anaesthetic trainees who often perform bronchoscopy.

Methods 8 Respiratory, 8 Anaesthetic and 8 bronchoscopy naive trainees underwent the simulation course. They participated in an assessment two months later. All trainees had access to the simulator to practice in the two-month period. Pre/post course and post assessment Likert scale questionnaires were carried out to assess confidence. Dexterity was assessed with data generated from the Simbionix Simulator including: final navigation scores, bronchial segments identified correctly and number wall hits in