

between knowledge and confidence levels in our sample. Lack of awareness of their need for education may represent a barrier to doctors accessing training. Respiratory physicians are well placed to lead improvements in ACP and general palliative care in hospital.

## Respiratory education and training

### P234 TRAINING DEFICIENCIES AND LACK OF CONFIDENCE AROUND KNOWLEDGE IN PRIMARY CARE NURSES TREATING ASTHMA AND COPD PATIENTS

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There has been an increasing shift of respiratory care from secondary to primary. We have undertaken a training needs analysis by questionnaire of primary care nurses who treat patients with Asthma and COPD in all 511 practices in the East of England. 63% responded. Nurses were asked to grade their confidence levels from high (5) to low (1) in aspects of Asthma and COPD. Chi-square was used for statistical analysis.

**Results** 1. ASTHMA. 63% had a diploma. 90% followed BTS/SIGN guidelines. There was a high confidence level in 27% for differential diagnosis, 52% for inhaler devices and how to use them, 24% for interpretation of spirometry, 39% for emergency treatment, 22% for dealing with children 5–12 years old. High confidence was significantly greater ( $<0.001$ ) in those with an asthma diploma.

2. COPD. 35% had a diploma. 82% followed NICE or GOLD guidelines. 76% ran clinics. There was a high confidence in 37% diagnosis, 37% for management and monitoring, 26% for interpreting spirometry, 32% in emergency treatment. High confidence was significantly greater in those with a COPD diploma. Nurses were asked if they were aware of services and confident how to refer; 94% were for smoking cessation, 55% for spirometry, 35% for oxygen assessment, 63% for pulmonary rehabilitation. The level of awareness was significantly higher for the latter two in those with a diploma.

3. ONGOING TRAINING OPPORTUNITIES Nurses were asked where and how often training was accessed on a scale 1–5. The most frequent (5) was self-directed learning in 37% and from the pharmaceutical industry 17%; the least (1) were time to learn 46%, monitoring with a practice expert 45%, secondary care provider 43%.

**Conclusions** This study has revealed serious deficiencies in training with many having no diploma. The benefit of having a diploma is shown in greater confidence in knowledge and in awareness of services and how to refer. On-going professional education is haphazard. If increasing care is going to be successfully transferred into primary both these issues must be addressed.

### P235 THE BRISTOL COPD KNOWLEDGE QUESTIONNAIRE (BCKQ): ASSESSING THE KNOWLEDGE OF HEALTHCARE PROFESSIONALS INVOLVED IN THE DELIVERY OF COPD SERVICES

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**Introduction** Healthcare professionals (HCPs) involved in the delivery of COPD services and self-management interventions require appropriate knowledge to inform patients about their condition. Although patient knowledge is often assessed to encourage patient education and self-management, little is done to assess the knowledge of HCPs providing disease information to patients and to establish whether HCPs have a broad spectrum of knowledge to effectively support disease management.

**Objective** To assess the knowledge of HCPs involved in the delivery of COPD services.

**Method** The Bristol COPD Knowledge Questionnaire (BCKQ) was distributed to 108 HCPs working in primary and secondary care COPD services (Coventry, Leicester, Lothian, Nottingham and Northampton) to assess knowledge. The BCKQ is primarily an outcome measure for patient knowledge (White *et al.* 2006). It is a multiple choice questionnaire containing 13 topics, each with five statements giving a total of 65 questions for which there is a right or wrong answer. Positive scoring was used with a mark being given for a correct answer. Incorrect responses indicate a knowledge deficit.

**Results** The overall findings revealed that HCPs had a mean score of 50 (77%) (minimum 24, maximum 62). The results from the BCKQ revealed particular gaps in knowledge in the breathlessness topic with a mean score of 3.3 (66%) (minimum 1, maximum 5) and across the medication topics, particularly inhaled steroids with only a mean score of 2.7 (54%) (minimum 0, maximum 5) of participants providing correct answers.

**Conclusion** The HCPs involved in the delivery of these COPD services had particular gaps in knowledge around breathlessness and medications. HCP gaps in knowledge could inadvertently impact patient knowledge and understanding of their condition and subsequently the ability of patients to effectively self-manage their COPD. Identifying gaps in knowledge can encourage HCP education and training to enhance HCP knowledge and subsequent patient care.

1. White, R. Walker, P. Roberts, S. Kalisky, S and White, P (2006) 'Bristol COPD Knowledge Questionnaire (BCKQ): testing what we teach patients about COPD'. *Chronic Respiratory Disease* 3: 123–131.

### P236 THE USE OF LOCAL ANAESTHESIA FOR ARTERIAL BLOOD GAS SAMPLING - A MULTICENTRE SURVEY

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**Background** BTS guidance for Emergency Oxygen Use recommends that local anaesthesia should be used for all routine arterial blood gas (ABG) sampling [1]. Intradermal and/or subcutaneous local anaesthetic (LA) via small gauge needle has been shown to reduce pain associated with the procedure by more than half [2]. We aimed to quantify the prevalence of this practice and ascertain potential barriers.

**Methods** 160 FY1 doctors with at least eight months working experience, from five hospitals in London were given a ten-item anonymised questionnaire to measure practice and opinions regarding local anaesthesia before ABG sampling.

**Results** All 115 respondents (72% response rate) performed ABG sampling regularly, with 84% doing so at least weekly.

Only 27% of respondents had ever used intradermal and/or subcutaneous LA before ABG sampling, although only 5% did this regularly.

The commonest needles used were 25 gauge (orange) (49%), 28 gauge (insulin needle) (18%), and 23 gauge (blue) (16%).

70% of respondents had never used LA of any kind for ABG sampling. Topical LA use was rare.

14% of respondents had never heard of LA used for ABG sampling; 24% were unfamiliar with how to do it; 14% believed it was potentially dangerous; 34% claimed not to have time, 21% believed that LA would not reduce the overall pain of the procedure (Figure 1).

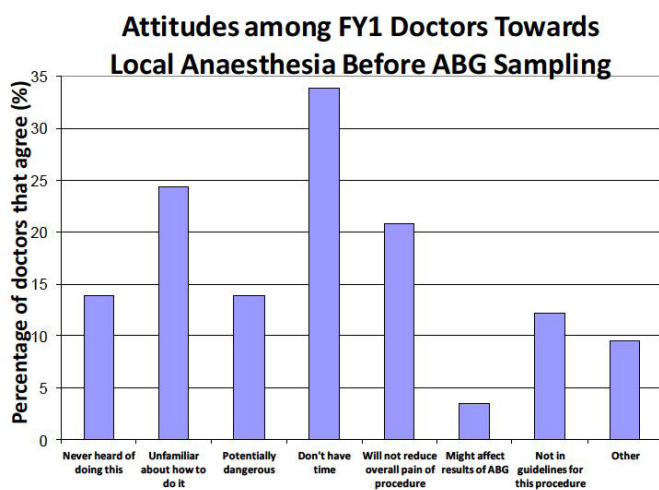
Allen's test was usually performed by only 25% of doctors before ABG sampling.

Only 30% of respondents believed using LA would lead to less repeated ABG sampling attempts.

93% of respondents had never personally been sampled for an ABG, although 44% would prefer LA to be used on them.

**Conclusion** The regular use of local anaesthesia before ABG sampling among FY1 doctors is rare. Awareness of the technique is poor, and education is needed. Prominence and promotion in teaching sessions and local guidelines, along with quick access to supplies is likely to help to prevent unnecessary pain in unwell patients.

1. O'Driscoll, Howard LS, Davison AG. BTS guideline for emergency oxygen use in adult patients. *Thorax*. 2008; 63 (Suppl VI):vi1-vi73.
2. Giner J, Casan P, Belda J, et al., Pain during arterial puncture. *Chest* 1996; 110:1443-5.



Abstract P236 Figure 1

**P237 EMERGENCY OXYGEN THERAPY: DO MEDICAL STUDENTS KNOW MORE THAN DOCTORS?**

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**Background** Oxygen therapy is a life safe drug which should be administered in accordance with British Thoracic Society Guidelines<sup>1</sup>.

**Objective** To assess the knowledge of medical students, foundation doctors and specialist registrars on emergency oxygen therapy in a district general hospital.

**Methods** A questionnaire was sent to all medical students, foundation doctors and specialist registrars, studying or working at our hospital. Six clinical scenarios were given and the student or doctor was asked to indicate how much oxygen they would administer from a choice of five possible options.

**Results** Out of a total of 283 surveys sent, there were 129 responses which included responses from 18 specialist registrars 33 foundation doctors and 77 medical students. The medical students answered 54.5% correctly, foundation doctors 58% correctly and specialist registrars 47.5% correctly. Overall, across all grades, participants were aware of the indications for high flow oxygen. However there was a poor appreciation of the need for controlled oxygen in patients with certain comorbidities such as chronic obstructive pulmonary disease with acute coronary syndrome and morbid obesity.

**Conclusions** This survey has shown a poor understanding of oxygen therapy in many emergency situations. Of concern, the knowledge of our registrars dealing with medical emergencies was poorer than the foundation doctors and medical students. This may be a

reflection that since the BTS emergency oxygen guidelines production, teaching on emergency oxygen has now become an integral part of medical student teaching which more senior doctors will not have benefited from. Education on oxygen therapy should be mandatory in medical schools and also to doctors in all grades throughout the trust.

1. O'Driscoll BR, Howard LS, Davison AG. BTS guideline for emergency oxygen use in adult patients. *Thorax* 2008; 63: Supplement VI

**P238 COMPETENCE IN, AND SAFETY OF, OXYGEN PRESCRIBING BY MEDICAL STUDENTS TAKING FINAL MBBS AS ASSESSED BY OBJECTIVE STRUCTURED CLINICAL EXAMINATION**

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**Introduction and Objectives** National audits show oxygen prescribing is still not consistently safe and appropriate, despite the 2008 BTS Emergency Oxygen Guidelines. The aim of this study was to assess whether medical students taking Final MBBS examinations are able to prescribe oxygen safely and appropriately.

**Methods** A 2012 medical school Final MBBS Objective Structured Clinical Examination station assessed oxygen prescribing. Candidates were presented with one of two clinical scenarios requiring an oxygen prescription on a drug chart; Scenario 1: 72-year-old patient with COPD, and Scenario 2: 72-year-old hypoxic patient without respiratory disease. Prescriptions from 227 out of 363 students taking MBBS were retrospectively assessed against BTS standards using the criteria; correct target saturation range, oxygen flow, device and frequency of delivery. The remaining prescriptions were not available for analysis. Prescriptions were classified as 'safe/unsafe' and 'perfect (met all standards)/imperfect' by a respiratory nurse specialist.

**Results** 66/122 (54%) of candidates wrote the correct saturation range for the COPD scenario, compared with 42/105 (40%) for scenario 2. Oxygen flows were correct in 74/122 (60.6%) of COPD and 4/105 (3.8%) of scenario 2 prescriptions. The flow was appropriate for the device in 91.2% (207/227) and prescriptions specified 'continuous' oxygen in 60.8% (138/227). 59/122 (48.4%) prescriptions for COPD were safe and 26/122 (21.3%) 'perfect' compared with 19/105 (18.1%) safe and 0/105 (0%) perfect prescriptions for the hypoxic patient without respiratory disease. 185/363 (51%) students passed this station with overall year pass rate for finals 96% (349/363).

**Conclusions** This study demonstrates an important unmet need in undergraduate education as competence in, and safety of, oxygen prescribing by otherwise successful MBBS candidates was poor. Of the prescriptions available for analysis, only half used appropriate target saturations. Half of prescriptions for COPD scenario were safe but only one in five met all BTS standards. No prescriptions for hypoxia without respiratory disease met all standards and one in five was safe. We believe that this reflects the undergraduate teaching focus on oxygen in COPD. We recommend introducing a compulsory undergraduate e-learning module on oxygen delivery and prescribing as newly-qualified doctors need to be able to prescribe oxygen safely.

**P239 JUNIOR DOCTORS PERFORMANCE AND INTERPRETATION OF SPIROMETRY**

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**Background** Spirometry is a fundamental respiratory function assessment tool. A significant proportion of junior doctors have